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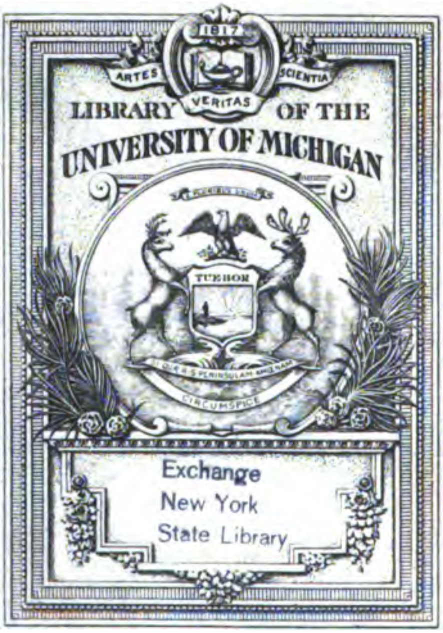

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LEGISLATIVE DOCUMENTS

ONE HUNDRED AND FORTY-SECOND SESSION

1919

VOL. XIV—NOS. 30 TO 31

ALBANY
J. B. LYON COMPANY, PRINTERS
1919

SUPPLEMENT
to the
STATUTORY RECORD
of the
UNCONSOLIDATED LAWS
Being the
SPECIAL, PRIVATE AND LOCAL STATUTES
of the
STATE OF NEW YORK
from
JANUARY 1, 1912, TO JANUARY 1, 1919

Prepared Pursuant to Laws 1917, Chapter 325, and Laws 1918, Chapter 424, by

CHARLES H. CLARK
and
CHARLES O. ROBERTS

1918

Vol. III

1912-1918

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PREFACE

This supplement covers a period from January 1, 1912, to January 1, 1919. It is a continuation of the statutory record of unconsolidated laws, prepared under the direction of Adolph J. Rodenbeck, Chairman of the Board of Statutory Consolidation, and published in 1911, containing a record of the special, private and local statutes of the State of New York from February 1, 1778, to January 1, 1912; but this supplement also contains a record of all general and other laws which are not incorporated in the consolidated laws and which have been either amended or enacted during the period from 1912 to 1918, inclusive.

The supplement conforms in style and arrangement to the statutory record of 1911 and some of the explanations contained in the preface of that work are herein included and are as follows:

The italicized words or figures opposite the chapter number indicate the statutes or parts of statutes that have been treated as special, private or local statutes.

The hyphen when used between two numbers means "both inclusive as well as intermediate numbers."

Wherever "pt." occurs it means "part."

Where a statute in terms affected a previous statute without specifying the section affected, it has not been deemed wise to attempt to point out the part affected, but simply to note the amending statute as affecting "all" of the original statute.

The sections of a statute affected have been arranged numerically, but where particular sections of a statute have been affected and the whole of the statute or a part, chapter, title or article of which the sections form a part has also been affected, the latter fact appears in the table following the particular sections affected and is indicated by the use of the word "all."

In the case of political divisions like cities and villages a special effort has been made on account of their importance, and the record gives each charter step complete by itself, connecting the first charter, by reference, with the second, the second with the third, and so on down to the last charter, which is connected by reference with the preceding charter, which in turn is connected with the next preceding charter, and so on to the first charter.

The special statutes relating to cities and villages not in terms amendatory of the main charter statutes are arranged for convenience under the so-called charters so that under each charter will be found the special statutes relating to these municipalities enacted between the date of the adoption of that charter and the next charter.

The term "Unconsolidated Laws" is used for the statutory record of the special, private and local statutes in contradistinction to the statutory record of the "consolidated laws," which comprises the general statutes of the State.

Where sections of statutes have been amended previous to January 1, 1912, and further amended since January 1, 1912, a record of all the amendments to these particular sections have been made in the supplement; and likewise where statutes enacted previous to January 1, 1912, have been affected by special statutes enacted subsequent to that date, the statute affected has been brought forward into the supplement and a reference made of the affecting statute with an explanatory foot-note. Statutes which affect other statutes and denoted by the use of the word "all" are also described by explanatory foot-notes.

An index, in which the references are to the year and chapter number of the statutes appearing in the supplement, has been added. Statutes amending, affecting or relating to certain statutes have been placed under the statute to which they pertain and are found in the supplement by reference to the main statute which is cited in the index.

Statutes enacted from 1912 to 1918 inclusive, but which are not classified as amending or affecting any other statute are also referred to in the index.

By consulting the index any previous statute which has been amended or affected during the years of 1912 to 1918 inclusive, or any statute which amends or affects any other prior statute, or any statute which has been enacted during the years of 1912 to 1918, inclusive, can be readily found in the supplement.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1819	66	*All*......	Jury districts in Washington county, repealing L. 1804, ch. 24, pt.						
		All......		1822	232				
		All......		1853	197				
		All......		....	...	....	1913	15	1
1821	47	*All*.....	Establishing justices' court in city of Albany. [Previous legislation, R. L. 1813, ch. 72.]						
		All......		....	...	....	1914	368	389
1822	150	*All*......	Incorporating General Theological Seminary of Protestant Episcopal Church in United States.						
		All......		1917	117[1]				
1822	152	*All*.....	Justices' court in city of Albany, amending L. 1821, ch. 47....						
		All......		....	...	....	1910	603	389
		All......		....	...	....	1914	368	

Revised Statutes						Amended or otherwise affected by			Expressly repealed by		
Pt	Ch.	Tit.	§	¶	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
					Dividing the state into counties. [Previous legislation, Revised Laws 1813, ch. 39.]						
					Bronx erected	1912	548				
					Bronx	1913	825				
					Bronx	1913	266				
					Bronx	1913	823				
1	2	1	2	25	Essex	1915	718				
					Franklin	1913	385				
1	2	1	2	14	Greene	1836	31				
1	2	1	2	14	Greene	1913	760				
1	2	1	2	14	Greene	1915	510				
1	2	1	2	22	Hamilton	1860	178				
1	2	1	2	22	Hamilton	1900	439				
1	2	1	2	22	Hamilton	1915	718				
1	2	1	2	3	Kings	1867	444				
1	2	1	2	3	Kings	1881	624				
1	2	1	2	3	Kings	1881	695				
1	2	1	2	3	Kings	1897	378				
1	2	1	2	3	Kings	1915	410				
1	2	1	2	2	Queens	1860	530				
1	2	1	2	2	Queens	1867	444				
1	2	1	2	2	Queens	1881	478				
1	2	1	2	2	Queens	1881	624				
1	2	1	2	2	Queens	1881	695				
1	2	1	2	2	Queens	1886	667				
1	2	1	2	2	Queens	1897	378				
1	2	1	2	2	Queens	1898	588				
1	2	1	2	2	Queens	1915	410				
					Saint Lawrence	1913	385				
1	2	1	2	18	Schoharie	1836	31				

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[1] Investment of funds.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Revised Statutes						Amended or otherwise affected by			Expressly repealed by		
Pt.	Ch.	Tit.	§	¶	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1	2	1	2	18	Schoharie....................	1913	760				
1	2	1	2	18	Schoharie....................	1915	510				
					Dividing the counties of the state into towns. [Previous legislation, Revised Laws 1813, ch. 101.]						
1	2	4	5	1	Bedford, Westchester county...	1916	p. 2505[1]				
1	2	4	15	2	Bethlehem, Albany county.....	1832	253				
1	2	4	15	2	Bethlehem, Albany county.....	1870	139				
1	2	4	15	2	Bethlehem, Albany county.....	1916	41				
					Colonie erected; Albany county.	1895	975				
					Colonie, Albany county.......	1896	905				
					Colonie, Albany county.......	1898	49				
					Colonie, Albany county.......	1905	55				
					Colonie, Albany county.......	1916	41				
1	2	4	29	6	Deerfield, Oneida county......	1832	72				
1	2	4	29	6	Deerfield, Oneida county......	1905	81				
1	2	4	29	6	Deerfield, Oneida county......	1913	518				
1	2	4	29	6	Deerfield, Oneida county.....	1916	449				
					Greenport erected; Columbia county....................	1837	420				
					Greenport, Columbia county...	1897	133				
					Greenport, Columbia county...	1915	528				
1	2	4	15	4	Guilderland, Albany county....	1916	41				
					Hurley, Ulster county.........	1918	p. 2097[1]				
					Indian Lake erected; Hamilton county....................	1859	[515][1]	p. 1199			
					Indian Lake, Hamilton county.	1860	200				
					Indian Lake, Hamilton county.	1915	718				
1	2	4	24	8	Minerva, Essex county........	1853	385				
1	2	4	24	8	Minerva, Essex county........	1857	[811][1]	p. 787			
1	2	4	24	8	Minerva, Essex county........	1871	[949][1]	p. 2175			
1	2	4	24	8	Minerva, Essex county........	1915	718				
1	2	4	24	8	Minerva, Essex county........	1916	...	p. 2507[1]			
					Minetto erected; Oswego county	1916	...	p. 2503[1]			
					Monroe, Orange county.......	1914	p. 2385[1]				
1	2	4	24	10	Newcomb, Essex county.......	1915	718				
1	2	4	24	10	Newcomb, Essex county.......	1916	...	p. 2507[1]			
1	2	4	29	11	New Hartford, Oneida county..	1834	182				
1	2	4	29	11	New Hartford, Oneida county..	1856	[209][1]	p. 352			
1	2	4	29	11	New Hartford, Oneida county..	1884	[554][1]	p. 736			
1	2	4	29	11	New Hartford, Oneida county..	1913	307				
1	2	4	29	11	New Hartford, Oneida county..	1915	532				
1	2	4	18	3	Niskayuna, Schenectady county.	1853	215				
1	2	4	18	3	Niskayuna, Schenectady county.	1865	705				
1	2	4	18	3	Niskayuna, Schenectady county.	1866	205				
1	2	4	18	3	Niskayuna, Schenectady county.	1902	204				
1	2	4	18	3	Niskayuna, Schenectady county, part added to city of Schenectady.....................	1914	58				
1	2	4	5	10	North Castle, Westchester county....................	1916	...	p. 2505[1]			
					Ohio, Herkimer county, includes part of town of Wilmurt.....................	1918	407				

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[1] Supervisors' resolution.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Revised Statutes						Amended or otherwise affected by			Expressly repealed by		
Pt.	Ch.	Tit.	§	¶	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1	2	4	54	12	Olean, Cattaraugus county....	1837	268				
1	2	4	54	12	Olean, Cattaraugus county....	1893	478				
1	2	4	54	12	Olean, Cattaraugus county....	1908	369				
1	2	4	54	12	Olean, Cattaraugus county....	1915	535	133			
1	2	4	31	10	Oswego, Oswego county.......	1836	378				
1	2	4	31	10	Oswego, Oswego county.......	1848	116				
1	2	4	31	10	Oswego, Oswego county.......	1916	... p. 2503[1]				
					Red Hoock, Dutchess county..	1914	p. 2387[1]				
					Rhinebeck, Dutchess county...	1914	p. 2387[1]				
1	2	4	18	5	Rotterdam, Schenectady county.	1853	215				
1	2	4	18	5	Rotterdam, Schenectady county.	1865	705				
1	2	4	18	5	Rotterdam, Schenectady county.	1866	205				
1	2	4	18	5	Rotterdam, Schenectady county.	1902	204				
1	2	4	18	5	Rotterdam, part added to city of Schenectady...............	1914	58				
1	2	4	29	19	Vernon, Oneida county........	1836	393				
1	2	4	29	19	Vernon, Oneida county, part made city of Sherrill........	1916	172				
					Webb erected; Herkimer county.	1897	p. 870[1]				
					Webb, Herkimer county, includes part of town of Wilmert..................	1918	407				
					Wilmurt erected; Herkimer county....................	1836	235				
					Wilmurt, Herkimer county.....	1897	p. 870[1]				
					Wilmurt abolished; Herkimer county....................	1918	407				
					Woodbury, Orange county.....	1914	p. 2385[1]				
					Woodstock, Ulster county.....	1918	p. 2097[1]				

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1829	234	*All*.....	High school at Newburgh......	....	...	....			
		All.....	....	....	...	....	1917	786	6
1830	48	*All*.....	Incorporating New York Law						
		5a (added)	Institute.................	1914	125	1			
1830	272	*All*.....	Incorporating the Canterbury						
		4.......	Fire Company............	1878	246				
		4.......	....	1904	205				
		4.......	....	1914	76				
		4a (added)	....	1912	176				
1831	235	*All*.....	Incorporating Oneonta and						
		All......	Franklin Turnpike Company.	....	..	....	1916	232	3
1834	295	*All*.....	Incorporating the Troy Academy						
		All......	emy......................	1837	351				
		All......	....	1839	4				
		All......	....	1912	143				

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[1] Supervisors' resolution.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1835	69	*All*	Incorporating Oneonta and Franklin Turnpike Company.						
		All		....	...	....	1916	232	3
1836	437	*All*	Fees of constables in city of Albany						
		All		....	...	....	1910	603	
		All		....	...	....	1914	368	
1837	139	*All*	Charter, village of Ellicottville, Cattaraugus county						
		All		1918	266[1]				
1839	4	*All*	Troy Academy, amending L. 1834, ch. 295						
		All		....	...	....	1912	143	5
1841	69	*All*	Incorporating the Middleport Cemetery Association						
		All		1915	676[2]				
1842	137	*All*	Common schools in city of Utica.						
		All		....	...	....	1917	786	6
1844	131	*All*	Common schools in city of Utica, amending L. 1842, ch. 137						
		All		....	...	....	1917	786	6
1844	157	*All*	Charter, village of Mohawk, Herkimer county						
		17, subd. 17		1880	412				
		17, subd. 17		1906	310				
		17, subd. 17		1917	125				
		17, subd. 25 (added)		1913	20				
		17, subd. 25		1913	255				
		17, subd. 25		1918	202				
		All		1916	306[3]				
1844	175	*All*	School district number one in town of Seneca, Ontario county.						
		All		....	...	....	1917	786	6
1844	347	*All*	Justice's court in city of Albany, amending L. 1821, ch. 47						
		All		....	...	....	1910	603	
		All		....	...	....	1914	368	
1845	57	*All*	Oneonta and Franklin Turnpike Company, amending L. 1835, ch. 69.						
		All		....	...	....	1916	232	3
1846	7	*All*	Common schools in city of Utica.						
		All		....	...	....	1917	786	6
1846	90	*All*	Incorporating the Hudson Orphan and Relief Association						
		2		1850	107				
		2		1915	184				
1846	185	*All*	Election of trustees of public lands in town of Eastchester, and defining their duties.						
		1		1913	120	1			
		3, subds. 3, 4, 5		1913	120	2			
		4		1913	120	3			
1846	193	*All*	Incorporating the University of Buffalo						
		10		1917	138	1			
1847	51	*All*	Common school in village of Lockport						
		15		1866	378				
		15		1900	152				
		15		1910	391				
		15		1916	431	1			
		All		....	...	....	1917	786	6
1848	70	*All*	Election of justices of justices' court, and police justice in city of Albany	....	...	....	1910	603	
		All							
		All		....	...	....	1914	368	

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[1] Paving streets.

[2] Commissioners appointed and removal of cemetery.

[3] Unpaid taxes.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1849	184	*All*	Charter city of Utica. [Previous charter, L. 1832, ch. 19; subsequent charter, L. 1862, ch. 1, 8.]						
		105		....	...	....	1917	786	6
		106		1856	164	....			
		106		1857	572				
		106		....	...	....	1917	786	6
1849	306	*All*	Election of local officers to discharge duties of county judge and surrogate in counties of Orange, Chautauqua, Cayuga and St. Lawrence, Tioga, Oneida, Jefferson and Oswego.						
		3		1895	494				
		3		1918	362				
		4 (added)		1918	362				
1850	66	*All*	Common schools in city of Utica, amending L. 1842, ch. 137						
		1		1852	258				
		1		1867	115	1			
		1		1877	243	2			
		1		1895	998	1			
		1		1898	431	1			
		1		1900	562	1			
		1		1904	242	1			
		1		1909	85	1			
		1		1917	254	1			
		All		....	...	....	1917	786	6
1850	77	*All*	Common schools in village of Lockport, amending L. 1847, ch. 51.						
		All		....	...	....	1917	786	6
1850	86	*All*	Taxes in city of Albany, repealing L. 1840, ch. 369; L. 1845, ch. 327; L. 1847, ch. 367.						
		48		1912	347	1			
1851	32	*All*	Penitentiary of Onondaga county						
		5		1901	207				
		5		1915	212				
1851	111	*All*	Charter village of Owego. [Previous charter, L. 1827, ch. 158.]						
		8		1890	373				
		8		1918	87				
		All		1918	103[1]				
1852	156	*All*	Free schools of Newburgh, repealing L. 1829, ch. 234						
		All		....	...	....	1917	786	6
1851	255	*All*	City of Troy and certain railroad corporations to subscribe for stock for construction of a railroad through city of Troy.						
		1		1916	251	1			
1852	180	*All*	Charter village of Brockport. [Previous charter, L. 1829, ch. 102.]						
		All		1915	19[2]				
1852	258	*All*	Common schools in city of Utica, amending L. 1850, ch. 66.						
		All		....	...	....	1917	786	6
1853	44	*All*	Support of the poor in town of Newburgh, Orange county						
		All		1913	224[3]				
1853	140	*All*	Charter village of Batavia. [Previous charter, L. 1823, ch. 239; subsequent charter, L. 1884, ch. 195; subsequent charter (city), L. 1914, ch. 354.]						
		All		1914	354[4]				

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[1] Bond issue to pay indebtedness.

[2] Abolishing office of collector.

[3] Commissioners authorized to purchase adjoining lands.

[4] City charter.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1853	243	*All*.....	Incorporating the De Veaux College for Orphan and Destitute children...............						
		1.......		1905	383				
		1.......		1910	498				
		1.......	....	1918	251				
1853	252	*All*.....	School district number one in town of Seneca, Ontario county....................						
		All......		....	...	....	1913	427	19
		All......		....	...	....	1917	786	6
1854	125	*All*.....	Charter village of Herkimer. [Previous charter, L. 1832, ch. 201.]						
		All......		1915	252[1]				
1854	348	*All*.....	Common schools in the city of Utica, amending L. 1842, ch. 137; L. 1852, ch. 258.						
		All......		....	...	....	1917	786	6
1855	154	*All*.....	Village of Akron, Erie county, amending L. 1847, ch. 426, in relation thereto.						
		All......		1917	31[2]				
1855	356	*All*.....	Charter village of Ballston Springs. [Previous charter, L. 1807, ch. 55.]						
		All......		1918	233[3]				
1855	357	*All*.....	School district number one in town of Seneca, Ontario county, amending L. 1853, ch. 252.						
		All......		....	...	....	1913	427	19
1855	459	*All*.....	Incorporating fund for relief of widows and orphans of deceased, aged, infirm and disabled clergymen of Protestant Episcopal church.						
		All......		1915	239[4]				
1856	164	*All*.....	City of Utica, supplementing L. 1849, ch. 184...............						
		5 [103]..		1857	572				
		5.......	....	....	...	....	1917	786	6
1856	184	*All*.....	Justices' court in city of Albany, amending L. 1821, ch. 47.....						
		All.....		....	...	....	1910	603	
		All.......	....	....	...	....	1914	368	
1857	89	*All*.....	Support of poor in town of Fishkill, Dutchess county.......						
		6.......		1882	186				
		6.......	....	1890	22				
		6.......	....	1915	329				
1857	179	*All*.....	Improving and repairing certain highway in Putnam county..						
		8.......		1858	138				
		8.......	....	1913	252				
1857	190	*All*.....	Incorporating the Alfred University, Allegany county.....						
		1,3.....		1917	145				
1857	382	*All*.....	Schools and academies in village of Ogdensburgh. [See L. 1851, ch. 263.]............						
		17......		1865	166	1			
		17......		1866	58				
		17......	....	1868	249	1			
		17......	....	1869	363	2			
		17......	....	1871	186				
		17......	....	1893	381				
		17......	....	1898	298				

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[1] Bond issue for sewer system legalized.

[2] Legalizing bonds for street lighting system.

[3] Bond issue for fire department.

[4] Consolidation with The Church Pension Fund.

The *italicised* matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1857	382	17		1900	573				
		17		1907	537				
		17		1914	226				
		17		1917	160	1			
		17		1917	330				
		17a (added)		1915	113				
		All		....	...	....	1917	786	6
1857	405	*All*	Reorganizing warden's office of Port of New York						
		8a (added)		1918	520				
1857	503	*All*	Ceding to town of Islip, Suffolk county, interest of State in certain lands.						
		3		1916	131				
1857	572	*All*	Common schools in the city of Utica, amending L. 1842, ch. 137; L. 1846, ch. 7; L. 1856, ch. 164.						
		All		....	...	....	1917	786	6
1857	753	*All*	Incorporating the International Bridge Company.						
		15a (added)		1915	666	1			
1857	763	*All*	Bulkhead and pier lines for port of New York, see L. 1855, ch. 121.						
		All		1916	499[1]				
1858	34	*All*	School district number nine in town of Pomfret, Chautauqua county, a Union Free School district.						
		1–9, 11–21		....	...	....	1917	786	6
1858	95	*All*	Common schools in village of Lockport, Niagara county, supplementing L. 1847, ch. 51.						
		All		....	...	....	1917	786	6
1858	138	*All*	Improving a certain highway in Putnam county, amending L. 1857, ch. 179.						
		2		1875	455				
		2		1913	252	1			
1858	269	*All*	School district library in city of Utica						
		All		....	...	....	1917	786	6
1859	10	*All*	Charter village of Whitesborough, Oneida county. [Previous charter, L. 1813, ch. 85.]						
		5		1866	143	1			
		5		1873	304	1			
		5		1884	539	3			
		5		1907	20				
		5		1917	108	1			
1859	105	*All*	Powers of board of education of the village of Ogdensburgh, St. Lawrence county.						
		All		....	...	....	1917	786	6
1859	239	*All*	Grosvenor Library of city of Buffalo						
		2		1861	160	1			
		2		1908	333				
		2		1913	391	1			
1859	243	*All*	Charter village of Waterford, Saratoga county. [Previous charter, L. 1805, ch. 58.]						
		3		1888	141				
		3		1899	109				
		3		1914	308				
		4, subd. 2		1914	308				
		4, subd. 2		1918	167				

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[1] Grant to city land at Hunt's Point, borough of Bronx.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1859	243	5		1914	308				
		5		1918	167				
		6, 8		1914	308				
		12		1868	34				
		12		1914	308				
		12		1918	167				
		16		1918	167				
		22		....	...	....	1914	308	
		25		1918	167				
		34, 37, 40, 41		1914	308				
		42		1893	290				
		42 (renumbered 53a)		1914	308				
		42 (added)		1914	308				
		43		1893	290				
		43		....	...	....	1914	308	
		43 (added)		1914	308				
		44		1893	290				
		44 (renumbered 53b)		1914	308				
		44 (added)		1914	308				
		45–49		1893	290				
		45–49 (added)		1914	308				
		50–53		....	...	....	1914	308	
		50–53 (added)		1914	308				
		53a (renumbered from § 42)		1914	308				
		53a		1918	167				
		53b (renumbered from § 44)		1914	308				
		53c, 53d (added)		1918	167				
		54		1918	...	....	1918	167	7
		All		1912	391[1]				
1859	298	*All*	Promoting education in the village of Corning, Steuben county.						
		All		....	...	....	1917	786	6
1859	303	*All*	Incorporating Union Free School District Number Four, town of Orangetown, Rockland county.						
		Pt.		....	...	....	1915	484[2]	2
1859	390	*All*	Auditing of accounts by board of supervisors of Montgomery county.						
		All		....	...	....	1913	119	
1860	68	*All*	Charter village of Catskill, Greene county. [Previous charter, L. 1822, ch. 211.]						
		1		1883	32				
		1		1888	254	1			
		1		1898	342	1			
		1		1913	115	1			
		2		1898	342				
		2		1913	115	2			
		4		1913	115	3			
		50		1898	342	12			
		50		1913	115	4			
1860	236	*All*	Legalizing state and county taxes in Rensselaer county, and sale of lands in city of Troy for unpaid taxes.						
		All		1918	304				

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[1] Town water works system.

[2] Body corporate continued.

[3] Legalizing tax sales.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1860	257	*All*.....	Incorporating Hyde Park Fire						
		7.......	Department in Dutchess	1901	401				
		7, subd. 3,	county.						
		par. e (added)......	....	1918	138	1			
		13......	....	1918	138	2			
1860	320	*All*.....	Incorporating Schoharie Valley						
		6.......	Stock Growers' Association..	1914	50	1			
1860	344	*All*.....	Support of poor of Rensselaer						
		All......	county..................	1918	25[1]				
1860	376	*All*.....	Incorporating Parochial Fund						
		All......	of Protestant Episcopal	1912	285[2]				
			Church in Diocese of New						
			York.						
1861	31	*All*.....	Police justice in town of Saugerties,						
		2, 3, 4, 8.	Ulster county..........	1917	131	1–4			
1861	87	*All*.....	Incorporating Mazeppa Fire						
		3.......	Engine Company of Nyack,	1885	97				
		3.......	Rockland county...........	1917	9	1			
1861	125	*All*.....	Charter village of Watkins,						
		Tit. 3, § 1	Schuyler county, formerly	1869	114	2			
		Tit. 3, § 1	Jefferson, Chemung county.	1872	224	11			
		Tit. 3, § 1	[Previous charter (as village	1901	258	1			
		Tit. 3, § 1	of Jefferson), L. 1842, ch. 219;	1916	202				
		Tit. 8, § 2	subsequent charter, L. 1918,	1872	224	10			
		Tit. 8, § 2	ch. 36.]......................	1912	210	1			
		Tit. 8, §§ 6–9	....	....	...	....	1916	202	
		All.....	....	....	...	....	1918	36	
1861	299	*All*.....	Fourth avenue in city of Brooklyn,						
		7.......	amending L. 1860, ch. 335	1912	450				
1862	18	*All*.....	Charter city of Utica. [Previous						
		51......	charter, L. 1849, ch. 184.]....	1870	28	9			
		51......	....	1914	304	1			
		52......	....	....	...	....	1914	304	2
		53......	....	1901	577	2			
		53......	....	1914	304	3			
		99, subd. 1......	....	1882	358	2			
		99, subd. 1......	....	1903	288	1			
		99, subd. 4......	....	1870	28	14			
		99, subd. 4......	....	1886	538	1			
		99, subd. 5 (added)......	....	1868	737				
		99, subd. 5......	....	1870	28	15			
		99, subd. 7 (added)......	....	1901	577	3			
		99......	....	1872	625	1			
		99......	....	1876	371	17			
		99......	....	1887	426	2			
		99......	....	1890	473	1			
		99......	....	1892	88	1			
		99......	....	1893	489	1			
		99......	....	1894	437	1			
		99......	....	1908	224	4			
		99......	....	1913	160	1			
		124......	....	....	...	....	1917	786	6

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[1] Changing title of office of superintendent of poor.

[2] Transfer trust property to any church.

The italicised matter following each chapter number indicates the part of such chapter treated as special private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1862	18	All.....	....	1913	307[1]				
		All.....	....	1913	518[2]				
		All.....	....	1916	449[3]				
		All.....	....	1916	374[4]				
		All.....	....	1917	818[5]				
1862	109	*All*..... 10......	Incorporating firemen of city of Schenectady...............	1914	297	1			
1862	188	*All*..... 1, 2.....	Incorporating New York State Convention of Universalists..	1918	231				
1862	358	*All*..... 4.......	Incorporating American Missionary Association.........	1871	796				
		4.......	....	1886	52				
		4.......	....	1917	341				
1862	359	*All*..... 5.......	Incorporating New York Commercial Association.........	1912	291	1			
1862	379	*All*..... All......	Exempting part of city of Albany from certain taxes.....	....	...	....	1916	98	
1863	164	*All*..... All......	Charter village of Waverly, Tioga county..............	1917	466[6]				
1863	377	*All*..... All..	.... Lockport, Niagara county, supplementing L. 1847, ch. 51. Common schools in village of	....	...	....	1917	786	6
1863	396	*All*..... All......	Charter village of Frankfort, Herkimer county...........	1915	406[7]				
1864	94	*All*..... All......	Union school district in towns of Lysander and Van Buren, Onondaga county.	....	...	....	1916	186	
1864	98	*All*..... All......	School District Number Nine in town of Pomfret, Chautauqua county, a union free school district, amending L. 1858, ch. 34.	....	...	....	1917	786	6
1864	368	*All*..... 3.......	Special county judge in Monroe county...................	1912	339				
1865	88	*All*..... All......	Free schools in village of Newburgh, Orange county, supplementing L. 1852, ch. 156.	....	...	....	1917	786	6
1865	264	*All*..... 2.......	Incorporating New York, College of Dentistry...........	1914	130	1			
1865	541	*All*..... All......	Charter city of Newburgh. [Previous charter (village), L. 1836, ch. 450; subsequent charter, L. 1907, ch. 203; L. 1916, ch. 575.]	....	...	....	1916	575	19
1865	659	*All*.....	Taxes in city of Utica.						
		2.......	....	1913	287				
		2.......	....	1914	120				

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[1] Annexing part of town of New Hartford.

[2] Boundaries extended to include part of town of Deerfield.

[3] Annexing part of the town of Deerfield.

[4] Land of cemetery in second ward acquired for park.

[5] Taxes from manufacturing and mercantile corporations.

[6] Indebtedness validated.

[7] Office of collector abolished.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1865	659	4		1868	592				
		4		1913	287				
		5, 6		....	...	....	1913	287	3
		7		1887	47				
		7		1913	287				
		7		1914	120				
		7		1915	399				
1866	9	*All*	Academy building in city of						
		All	Utica	....	...	....	1917	786	6
1866	58	*All*	Schools and academies in the						
		All	village of Ogdensburg, St. Lawrence county, amending L. 1857, ch. 382.	....	...	....	1917	786	6
1866	114	*All*	City of Newburgh, amending						
		All	L. 1865, ch. 541.	....	...	....	1916	575	198
1866	127	*All*	Collection of taxes in town of						
		All	Oswegatchie, St. Lawrence county.	....	...	....	1916	274	
1866	220	*All*	Charter village of Saratoga						
		12	Springs. [Previous charter,	1869	893	4			
		12	L. 1826, ch. 226; subsequent	1894	645	1			
		12	charters (city), L. 1915, ch. 229; L. 1916, ch. 229.]	1913	171	1			
		54, subd. 4a (added)		1913	171				
		54, subd. 4a (added)		1913	169	1[1]			
		54, subd. 8		1896	314				
		54, subd. 8		1913	106				
		54, subd. 9 (added)		1913	169	1			
		54, subd. 10 (added)		1913	169	1			
		54, subd. 11 (added)		1913	169	1			
		82 (added)		1901	250				
		82		1913	104				
		86 (added)		1910	690				
		86		1913	576	1			
		87 (added)		1910	690				
		87		1911	425	2			
		87		1913	576	2			
		90 (added)		1912	127	1			
		91 (added)		1912	127	1			
		91 (added)		1912	366				
		92 (added)		1912	127	1			
		92 (added)		1912	366				
		93 (added)		1912	127	1			
		93 (added)		1912	366				
		93		1913	576				
		94 (added)		1912	127	1			
		94 (added)		1912	366				
		94a (added)		1913	164				
		95–102 (added)		1912	127	1			
		All		1915	229[2]				
		All		1916	229[2]				

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[1] Identical subd. 4a is added by L. 1913, ch. 171.

[2] City charters.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1866	351	*All*	Charter village of White Plains,						
		All	Westchester county. [Subse-	....	...	....	1915	356	
			quent charters, L. 1867, ch.						
			518; L. 1915, ch. 356.]						
1866	378	*All*	Common schools in village of						
		All	Lockport, Niagara county,	....	...	....	1917	786	6
			supplementing L. 1847, ch.						
			51; L. 1850, ch. 77.						
1866	517	*All*	Changing name of Randolph						
		7	Academy Association of Ran-	....	...	....	1917	314	1
			dolph, New York, to Cham-						
			berlain Institute.						
1866	541	*All*	City of Newburgh, amending L.						
		All	1865, ch. 541	....	...	....	1916	575	198
1866	579	*All*	Union free school district num-						
		All	ber one in town of Deerpark,	....	...	....	1917	786	6
			Orange county.						
1866	581	*All*	Incorporating New York City						
		1, 2	Sunday School and Mission-	1912	317	1			
		3	ary Society of Methodist	1872	672	1			
		3	Episcopal church	1902	248	1			
		3		1912	317	1			
		4		1871	94	2			
		4		1872	672	2			
		4		1875	395				
		4		1902	248	2			
		4		1912	317	1			
1866	628	*All*	Charter village of Nassau, Rens-						
		All	selaer county. [Previous	1917	30[1]				
			charter, L. 1819, ch. 47.]						
1866	633	*All*	Benevolent fund of late volun-						
		1, 2, 4	teer fire department in New	1886	15				
		1, 2, 4	York city	1916	490				
1866	727	*All*	Consolidating school districts						
		2–4	number one, three and fifteen,	....	...	....	1918	247	3
		5	and part of number two of	1887	199				
		5	town of Mount Morris, Liv-	1888	267				
		5	ingston county	....	...	....	1918	247	3
		6		1892	355				
		6–13		....	...	....	1918	247	3
		14		1887	199				
		14		1888	267				
		14–32		....	...	....	1918	247	3
1866	839	*All*	Consolidating school districts						
		All	seven and twenty-eight in	1868	259				
		9	town of Onondaga, Onondaga	1916	194	1			
			county.						
1867	56	*All*	Salaries of justices' court of city						
		All	of Albany	....	...	....	1910	603	
		All		....	...	....	1914	368	
1867	78	*All*	Incorporating Masonic Hall As-						
		1	sociation of Watertown	1914	131	1			

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[1] Bond issue for water supply legalized.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1867	88	*All*	City of Newburgh to enlarge and improve water works, supplementing L. 1865, ch. 541.						
		All		....	...	....	1916	575	198
1867	115	*All*	Common schools of city of Utica, amending L. 1842, ch. 137; 1850, ch. 66.						
		All		....	...	....	1917	786	6
1867	329	*All*	Incorporating Peabody Education Fund						
		All		....	...	....	1917	464	1
1867	330	*All*	Charter village of Fairport, Monroe county. [Subsequent charter, L. 1881, ch. 638.]						
		Title		1874	135				
		All		1881	638				1
		39a, 45a, 45b (added)		1916	198				
1867	353	*All*	Consolidating school districts within village of Saratoga Springs.						
		All		....	...	....	1917	780	6
1867	451	*All*	Charter village of Mayville, Chautauqua county. [Previous charter, L. 1830, ch. 276.]						
		All		1915	177[1]				
1867	498	*All*	Peabody Education Fund, amending L. 1867, ch. 329						
		All		....	...	....	1917	464	1
1867	518	*All*	Charter village of White Plains, Westchester county. [Previous charter, L. 1866, ch. 351; subsequent charter (city), L. 1915, ch. 356.]						
		Tit. 2, § 4		1871	805	7			
		Tit. 2, § 4		1878	179	5			
		Tit. 2, § 4		1895	109	3			
		Tit. 2, § 4		1896	768	4			
		Tit. 2, § 4		1903	616	2			
		Tit. 2, § 4		1911	713	3			
		Tit. 2, § 4		1912	493	1			
		Tit. 2, § 8		1878	179	8			
		Tit. 2, § 8		1912	493	2			
		Tit. 2, §§ 18, 19 (added)		1911	713	12, 13			
		Tit. 2, §§ 18, 19		1913	300				
		Tit. 4, § 1		1873	409	3			
		Tit. 4, § 1		1878	179	22			
		Tit. 4, § 1		1884	493	3			
		Tit. 4, § 1		1890	315	13			
		Tit. 4, § 1		1895	109	13			
		Tit. 4, § 1, subds. 1, 3		1896	768	8, 9			
		Tit. 4, § 1, subds. 5–7		1902	201	12–14			
		Tit. 4, § 1, subd. 9		1896	768	10			
		Tit. 4, § 1, subds. 9, 10		1902	201	15, 17			
		Tit. 4, § 1, subd. 11		1896	768	11			
		Tit. 4, § 1, subd. 12		1902	201	18			
		Tit. 4, § 1, subd. 13 (added)		1902	201	19			
		Tit. 4, § 1		1906	94	1			
		Tit. 4, § 1		1907	604	10			
		Tit. 4, § 1		1911	713	17			
		Tit. 4, § 1		1912	493	3			
		Tit. 4, § 1		1913	300				
		Tit. 4, § 8 (added)		1878	179	26			
		Tit. 4, § 8		1884	493	5			

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[1] Bond issue for electric lights and water.

The italicised matter following each chapter number indicates the part of such chapter treated as special. private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1867	518	Tit. 4, § 8		1896	768	18			
		Tit. 4, § 8		1902	201	22			
		Tit. 4, § 8		1912	126				
		Tit. 4, § 8		1913	300				
		Tit. 7, § 20 (added)		1902	201	37			
		Tit. 7, § 20		1912	493	4			
		All		....	...	....	1915	356	
		All		1912	152[1]				
		All		1913	178[2]				
		All		1915	35[3]				
1867	573	*All*	Union free school district number one in town of Deerpark, Orange county, amending L. 1866, ch. 579.						
		All		....	...	....	1917	786	6
1867	674	*All*	Streets and roads in city of Newburgh, and for other purposes, extending L. 1865, ch. 541; L. 1866, ch. 114.						
		All		....	...	....	1916	575	198
1867	787	*All*	Consolidating several school districts and parts of districts in village of Saratoga Springs, Saratoga county, amending L. 1867, ch. 353.						
		All		....	...	....	1917	786	6
1867	822	*All*	Common schools in city of Lockport						
		All		....	...	....	1917	786	6
1867	858	*All*	Collection of taxes in Onondaga county						
		1		1899	263				
		1		1904	332				
		1		1905	253				
		1		1913	301				
		4		1899	263				
		4		1918	129				
		6		1869	154				
		6		1899	263				
		6		1900	102				
		6		1902	100				
		6		1918	129				
		9		1899	263				
		9		1900	102				
		9		1901	381				
		9		1902	100				
		9		1918	129				
1867	941	*All*	Charter village of Churchville, Monroe county. [Previous legislation, L. 1853, ch. 315.].						
		Tit. 6, § 1		1888	413	1			
		Tit. 6, § 1		1916	212	1			
1868	82	*All*	Education in village of Corning, Steuben county, amending L. 1859, ch. 298.						
		All		....	...	....	1917	786	6
1868	136	*All*	Charter village of Cobleskill, Schoharie county						
		Tit. 2, § 3		1916	26				

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[1] Refund assessment bonds, or certificates of indebtedness.

[2] Paving of streets.

[3] Legalizing election for bond issue.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1868	249	*All*	Academies and schools in village of Ogdensburgh, St. Lawrence county, amending L. 1857, ch. 382.						
		All......		....	...	....	1917	786	6
1868	264	*All*	Fines and penalties in city and town of Newburgh, Orange county, amending L. 1853, ch. 44.						
		All......		....	...	....	1916	575	198
1868	312	*All*	Education in village of Corning, Steuben county, amending L. 1859, ch. 298; L. 1868, ch. 82.						
		All......		....	...	....	1917	786	6
1868	591	*All*	Preventing burials near water supply for city of Brooklyn.						
		1.......		1918	653				
1868	630	*All*	Consolidating several school districts within village of Saratoga Springs, amending L. 1867, ch. 353.						
		All......		....	...	....	1917	786	6
1868	667	*All*	The Conrad Poppenhusen Association, village of College Point, Queens county						
		1, 3, 9, 10		1913	669	1			
		12......		1890	128	3			
		12......	....	1913	669	2			
1868	729	*All*	Common schools in city of Lockport, amending L. 1847, ch. 51.						
		All......		....	...	....	1917	786	6
1868	802	*All*	Facilitating construction of Newburgh and Wallkill Valley Railroad.						
		All......		....	...	....	1916	575	198
1868	818	*All*	Charter village of Port Chester, Westchester county.						
		Tit. 3, § 1 subd. 21 (added)	....	1881	156				
		Tit. 3, § 1; subd. 21	....	1916	265				
		Tit. 5, § 4	....	1902	219				
		Tit. 5, § 4	....	1905	606				
		Tit. 5, § 4	....	1908	32				
		Tit. 5, § 4	....	1914	404				
		Tit. 5, § 29	....	1912	19				
		Tit. 5, § 33	....	1875	245				
		Tit. 5, § 33	....	1894	623				
		Tit. 5, § 33	....	1896	591				
		Tit. 5, § 33	....	1902	219				
		Tit. 5, § 33	....	1908	32				
		Tit. 5, § 33	....	1915	6				
		Tit. 5, § 50 (added)	....	1887	542				
		Tit. 5, § 50	....	1890	256				
		Tit. 5, § 50	....	1912	18				
		All	....	1912	29[1]				
		All......	....	1912	155[2]				
		All......	....	1914	504[3]				
		All......	....	1916	29[4]				
		All......	....	1916	221[5]				

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[1] Bond issue to repair " old Willet avenue fire house."
[2] Sewers and sewage disposal works.
[3] Boundaries of Union Free School District No. 4, town of Rye, including portions of village
[4] Extending time to lay out highway over lands ceded by State.
[5] Public wharf.

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1868	818	All		1917	78[1]			
		All		1917	175[2]			
		All		1917	650[3]			
1869	35	*All*	City of Newburgh, amending L.					
		All	1865, ch. 541	....	...	....	1916	57
1869	43	*All*	School district number one ot					
		All	town of Seneca, Ontario					
		All	county, supplementing L.	....	...	....	1913	427
			1853, ch. 252; L. 1855, ch. 357.	....	...	....	1917	78
1869	76	*All*	Confirmation of vote of electors					
		1	of town of Hempstead, Queens	1899	432			
		1	county, in relation to public	1916	209			
		2	cemetery	1916	209			
		5 (added)		1899	432			
		5		1916	209			
1869	122	*All*	Free schools in village of New-					
		All	burgh, Orange county, amend-	....	...	....	1917	78
			ing L. 1865, ch. 88.					
1869	129	*All*	Charter village of Williamsville,					
		17	Erie county	1914	209			
		29		1914	209			
		36		1914	209			
1869	182	*All*	Incorporating board of educa-					
		5	tion of Methodist Episcopal	1885	19			
		5	church	1917	95			
		8a (added)		1909	253			
		8a		....	...	....	1917	9
1869	191	*All*	Changing name of Homeopathic					
		2	Medical College of State of	1887	515			
		2	New York, in New York city,	1908	150			
		2	to New York Homeopathic	1916	289			
			Medical College, amending					
			and repealing in part L. 1860,					
			ch. 329.					
1869	235	*All*	City of Newburgh, amending					
		All	L. 1865, ch. 541	....	...	....	1916	57
1869	294	*All*	Incorporating fire department of					
		All	city of Binghamton	....	...	....	1912	49
1869	363	*All*	Academies and schools in village					
		All	of Ogdensburg, St. Lawrence	....	...	....	1917	78
			county, amending L. 1857, ch.					
			382; L. 1868, ch. 249.					
1869	419	*All*	Draining wet lands in town and					
		14	village of Goshen, Orange	....	...	....	1914	77
		14 (added)	county	1914	77			
1869	443	*All*	Charter village of Charlotte,					
		All	Monroe county	1915	486[4]			
1869	584	*All*	Incorporating Manhattan Eye					
		1	and Ear Hospital in New	1884	349			
		1	York city	1914	53[5]			

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[1] Bond issue to pay certificates of indebtedness.

[2] Lands ceded for highway purposes.

[3] Bond issue for fire apparatus.

[4] Collection of tax on foreign fire insurance companies.

[5] Name changed to Manhattan Eye, Ear and Throat Hospital and Medical Schoo

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1869	584	2		1894	533				
		2		1914	53				
		3		1884	349				
		3		1894	533				
		3		1917	88				
1870	9	*All*	Geneva classical and union school of district number one, in town of Seneca, Ontario county, to borrow money for school house.						
		All		....	...	....	1913	427	19
1870	101	*All*	Incorporating trustees of the Central New York Conference of the Methodist Episcopal Church						
		1		1916	361				
		2		1910	184				
		2		1916	361				
		3		1910	184				
		3		1916	361				
		5		1916	361				
1870	118	*All*	Common schools of city of Utica, amending L. 1842, ch. 137.						
		All		....	...	....	1917	786	6
1870	139	*All*	Annexing part of towns of Bethlehem and Watervliet, Albany county, to city of Albany, and part of city of Albany to town of Watervliet, Albany county. [See R. S. pt. 1, ch. 2, tit. 4.]						
		2		1877	402				
		2		1880	333				
		2–5		....	...	....	1916	98	
		6		1871	727				
		6–9		....	...	....	1916	98	
1870	591	*All*	Disposition of money from sale of common lands of town of Hempstead, Queens county						
		Title		1915	291				
		2, 4		1915	291				
		7		1872	563				
		7		1880	45				
		7		1910	36				
		7		1915	291				
1870	693	*All*	Village of White Plains, Westchester county, amending L. 1866, ch. 351, as amended by L. 1867, ch. 518.						
		All		....	...	....	1915	356	307
1871	186	*All*	Academies and schools in village of Ogdensburg, St. Lawrence county, amending L. 1857, ch. 382.						
		All		....	...	....	1917	786	6
1871	337	*All*	Police justices and justices of justices' court of city of Albany						
		1, 2		....	...	....	1910	603	
		1, 2		....	...	....	1914	368	
1871	416	*All*	Incorporating St. George's Brotherhood, in town of Flushing, Queens county.						
		3, 4		1916	111				
1871	606	*All*	Village of White Plains, Westchester county, to improve Railroad avenue.						
		All		....	...	....	1915	356	307
1871	637	*All*	Police commissioners in village of Green Island, Albany county						
		9		1872	407				
		9		1915	162				
		15		1872	407				
		15		1915	162				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1871	727	*All*.....	Annexing part of towns of Bethlehem and Watervliet, Albany county, to city of Albany, amending L. 1870, ch. 139.						
		All......		....	...	....	1916	98	1
1872	287	*All*.....	Incorporating the Board of Home Missions of the Presbyterian Church in the United States of America.						
		All......		1915	420[1]				
1872	323	*All*.....	Receiver of taxes and assessments for town and village of Saratoga Springs.						
		5.......		1913	105	1			
1872	551	*All*.....	City of Newburgh, amending L. 1865, ch. 541, and amendatory acts.						
		All......		....	...	....	1916	575	198
1872	668	*All*.....	Village of White Plains, Westchester county, to improve Railroad avenue, amending L. 1871, ch. 606.						
		All......		....	...	....	1915	356	307
1873	127	*All*.....	Town hall at Waterford, Saratoga county................						
		All......		1874	16				
		All......	....	....	...	....	1914	43	10
1873	197	*All*.....	Incorporating the Trustees of the Northern New York Conference of the Methodist Episcopal Church..............						
		1, 2, 3...		1918	187				
		4.......		1882	253				
		4.......		1895	790				
		4.......	....	1918	187				
		5, 7.....	....	1918	187				
1873	234	*All*.....	Schools in village of Lockport, Niagara county, amending L. 1847, ch. 51.						
		All......		....	...	....	1917	786	6
1873	330	*All*.....	Charter village of Deposit, Broome and Delaware counties. [Previous charter, L. 1858, ch. 17; subsequent charter, L. 1914, ch. 12.]						
		All......		1914	12[2]				
1873	364	*All*.....	Eighty-sixth street in towns of New Utrecht and Gravesend, Kings county. [See L. 1869, ch. 670.]						
		All......		1874	641				
		All......		1914	377[3]				
1873	386	*All*.....	Education in village of Hornellsville, Steuben county........						
		All......		....	...	....	1917	786	6
1873	409	*All*.....	Village of White Plains, Westchester county, amending L. 1867, ch. 518; L. 1870, ch. 693.						
		All......		....	...	....	1915	356	307
1873	434	*All*.....	Incorporating Fireman's Association of the State of New York.....................						
		6.......		1894	619				
		6.......		1914	30				
1873	623	*All*.....	Common schools in village of Lockport, amending L. 1847, ch. 51.						
		All......		....	...	....	1917	786	6

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[1] Women's Board of Home Missions of the Presbyterian Church, Incorporated.

[2] New charter.

[3] Application of owners of certain lands for cancellation of tax sale.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1873	666	*All*	Common schools in city of Utica, amending L. 1846, ch. 7; L. 1850, ch. 66; L. 1857, ch. 572; L. 1867, ch. 390.						
		All		....	...	....	1917	786	6
1873	670	*All*	Sewers in village and town of Saratoga Springs, Saratoga county, amending L. 1871, ch. 673.						
		4[1]		1912	526[1]				
1874	16	*All*	Town of Waterford, Saratoga county, to issue bonds for town hall, bell and town clock. [See L. 1873, ch. 127.]						
		All		....	...	....	1914	43	10
1874	256	*All*	Roads and avenues in village and town of Saratoga Springs, Saratoga county, amending L. 1870, ch. 623						
		4		1876	262				
		4		1884	343				
		4		1885	104				
		4		1890	478				
		4		1912	526				
1874	610	*All*	Collection of unpaid taxes in Westchester county						
		All		1913	656[2]				
		All		1914	510[3]				
		All		1915	40[4]				
1874	626	*All*	City of Newburgh, amending L. 1865, ch. 541; L. 1872, ch. 551.						
		All		....	...	....	1916	575	198
1875	18	*All*	City of Newburgh to borrow money						
		All		....	...	....	1916	575	198
1875	169	*All*	School district number nine in town of Pomfret, Chautauqua county, a union free school district, amending L. 1858, ch. 34.						
		All		....	...	....	1917	786	6
1875	326	*All*	City of Newburgh, amending L. 1865, ch. 541; L. 1872, ch. 551.						
		All		....	...	....	1916	575	198
1875	577	*All*	Public schools in city of Auburn. [See L. 1869, ch. 273; supplementing L. 1871, ch. 93; L. 1874, ch. 99.]						
		28		1879	318				
		28		1909	591				
		28		1911	422				
		28		1914	286				
		All		....	...	....	1917	786	6
1875	605	*All*	County treasurers of Monroe and Seneca counties						
		6a (added)		1915	393	1			
1876	147	*All*	Improvement of Harlem river and Spuyten Duyvil creek by the United States						
		13–16 (added)		1913	414				
1877	243	*All*	Common schools in city of Utica, amending L. 1842, ch. 137; L. 1850, ch. 66.						
		All		....	...	....	1917	786	6

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[1] L. 1912, ch. 526, amends § 4 of L. 1874, ch. 256, and not § 4 of L. 1873, ch. 670.
[2] Certain general statutes declared ineffective.
[3] Additional requirements in preparation of assessment-rolls and for collection of taxes.
[4] Collection of taxes.

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Statutes				Amended or otherwise affected by			Expressly by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch
1877	402	*All*	Annexing part of towns of Bethlehem and Watervliet, Albany county, to city of Albany, and annexing part of Albany to Watervliet, amending L. 1870 ch. 139.					
		All					1916	9
1877	441	*All*	Union free school district number one of town of Ellicott, Chautauqua county, to employ superintendent.					
		All					1917	78
1878	168	*All*	City of Newburgh, amending L. 1865, ch. 541, and amendatory acts.					
		All					1916	57
1878	179	*All*	Village of White Plains, Westchester county, amending L. 1867, ch. 518.					
		All					1915	35
1878	188	*All*	Incorporating district number one of Independent Order of Benai Berith					
		2		1885	100			
		2		1896	58			
		2		1916	146	1		
1879	74	*All*	Relief of poor in town of Haverstraw, Rockland county					
		6		1918	371			
1879	142	*All*	Charter village of Albion. [Previous charter, L. 1842, ch. 125.]					
		Tit. 1, § 1		1882	93			
		Tit. 1, § 1		1883	262			
		Tit. 1, § 1		1917	275			
		Tit. 2, § 2		1888	28			
		Tit. 2, § 2		1900	646			
		Tit. 2, § 2		1905	205			
		Tit. 2, § 2		1912	30			
		Tit. 2, § 5		1912	30			
		Tit. 5, § 5		1912	30			
		Tit. 5, § 14 (added)		1912	30			
		Tit. 8, §§ 4, 5		1914	83			
		Tit. 9		1888	28			
		Tit. 9, § 2		1913	575			
		Tit. 9, §§ 2, 4		1917	275	2, 3		
		Tit. 10, §§ 5, 7		1912	30	5		
1879	318	*All*	Public schools in city of Auburn, amending, L. 1875, ch. 577					
		All					1917	786
1880	17	*All*	School district number nine in town of Pomfret, a union free school district, amending L. 1858, ch. 34.					
		2					1917	786
1880	68	*All*	Sale of lands in town and village of Saratoga Springs, Saratoga county, for unpaid taxes.					
		9 (added)		1912	525			
		9 (renumbered 10)		1913	170			
		9 (added)		1913	170			
		10–13 (added)		1912	525			
1880	150	*All*	Treasurer of Orleans county to sell property for unpaid taxes.					
		All					1915	215
1880	333	*All*	Annexing parts of towns of Bethlehem and Watervliet in Albany county, to city of Albany, amending L. 1870, ch. 139; L. 1877, ch. 402.					
		All					1916	98

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1880	402	*All*	Charter village of Cambridge, Washington county. [Previous charter, L. 1866, ch. 606.]						
		All		1912	181[1]				
1880	524	*All*	Conferring additional powers on boards of education of union free school district number one of town of Deerpark, and school district number four of town of Johnstown.						
		All		....	...	....	1917	786	6
1881	70	*All*	Schools and academies in village of Ogdensburg, amending L. 1857, ch. 382.						
		All		....	...	....	1917	786	6
1881	180	*All*	School district number nine in town of Pomfret, a union free school district, amending L. 1858, ch. 34.						
		All		....	...	....	1917	786	6
1881	294	*All*	Education in village of Hornellsville, Steuben county, amending L. 1873, ch. 386.						
		All		....	...	....	1917	786	6
1881	345	*All*	Location of burial grounds or cemeteries within city of Buffalo, amending L. 1880, ch. 82.						
		2		1886	115				
		2		1914	290				
1881	438	*All*	Justices' courts of city of Albany.						
		All		....	...	....	1910	603	
		All		....	...	....	1914	368	
1881	515	*All*	City of Newburgh, amending L. 1865, ch. 541						
		All		....	...	....	1916	575	198
1881	598	*All*	Incorporating The New York Building and Improvement Company.						
		2		1917	363				
1882	128	*All*	Releasing interest of the state in certain lands to village of Sing Sing, Westchester county.						
		1		1917	460				
1882	133	*All*	Collection of taxes in Cayuga county						
		All		....	...	....	1914	322	
1882	168	*All*	Union free school district number one of town of Olean, Cattaraugus county.						
		All		....	...	....	1917	786	6
1882	254	*All*	City of Newburgh, amending L. 1865, ch. 541						
		All		....	...	....	1916	575	198
1882	322	*All*	Taxes in Oswego county.						
		All		....	...	....	1914	387	
1882	327	*All*	Incorporating Actors' Fund of America						
		4		1917	132				
1882	359	*All*	Charter village of Waterloo, Seneca county. [Previous charter, L. 1865, ch. 345.]						
		All		1915	145[2]				
		All		1916	272[2]				
1882	410	*All*	New York city consolidation act. [Previous charter, L. 1873, ch. 335; subsequent charter, L. 1897, ch. 378.]						
		1466, subd. 1 (added)		1886	353				
		1466, subd. 1		1903	436				

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[1] Real property conveyed to village and town for municipal purposes.

[2] Bond issue for paving.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1882	410	1466, subd. 1		1904	537				
		1466, subd. 1		1914	445				
		1503		1885	239				
		1503		1887	564				
		1503		1895	696				
		1503		1907	632				
		1503		1910	295				
		1503		1911	516				
		1503		1912	191				
		1503		1918	618				
		1503a (added)		1915	355				
		1505a (added)		1914	469				
		1766		1895	846				
		1766		....	...	....	1915	284	
		1767		....	...	....	1915	284	
		1768		1889	443				
		1768		1895	846				
		1768		1896	732				
		1768		....	...	....	1915	284	
		1769–1774		....	...	....	1915	284	
		1775		1895	846				
		1775		....	...	....	1915	284	
		1776		1895	846				
		1776		1908	84				
		1776		....	...	....	1915	284	
		1777–1779		....	...	....	1915	284	
		1991		1888	10				
		1991		1893	289				
		1991		1894	534				
		1991		1918	179				
1883	117	*All*	Charter village of Peekskill, Westchester county. [Previous charter, L. 1859, ch. 62.]						
		Tit. 1, § 1		1895	677				
		Tit. 1, § 1		1906	329				
		Tit. 1, § 1		1915	7				
		Tit. 2, § 4		1902	306				
		Tit. 2, § 4		1916	263				
		Tit. 2, § 4		1918	18				
		Tit. 5, § 3, subd. 27		1917	198				
		Tit. 7, § 2, subd. 3 (added)		1904	295				
		Tit. 7, § 2, subd. 3		1912	326				
		Tit. 7, § 2, subd. 3 (as added)		1911	511				
		Tit. 7, § 2, subd. 3 (renumbered subd. 4)		1912	326				
		Tit. 7, § 2, subd. 4		1916	4				
		Tit. 7, § 8 (added)		1916	277				
		Tit. 9, § 2		1888	180				
		Tit. 9, § 2		1897	485				
		Tit. 9, § 2		1902	25				
		Tit. 9, § 2		1907	287				
		Tit. 9, § 2		1909	510				
		Tit. 9, § 2		1912	23				
		Tit. 10, § 1		1906	424				
		Tit. 10, § 1		1915	157				
		Tit. 10, § 1		1918	200				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1883	117	All		1912	134[1]				
		All		1913	89[2]				
		All		1913	336[3]				
		All		1916	2[4]				
		All		1916	3[5]				
		All		1917	43[6]				
		All		1917	309[7]				
1883	163	*All*	School district number nine in town of Pomfret, a union free school district, amending L. 1858, ch. 34.						
		All		....	...	....	1917	786	6
1883	173	*All*	Incorporating fund for relief of disabled firemen of city of Albany.						
		All		....	...	....	1914	285	15
1883	241	*All*	Incorporating international committee of Young Men's Christian Association						
		2		1915	97				
		4		1907	251				
		4		1915	97				
		5, 6		1915	97				
1883	257	*All*	Board of trustees in New York city for parishes in foreign countries of Protestant Episcopal Church.						
		All		1913	268[8]				
1883	263	*All*	Unpaid taxes in towns of Dutchess county						
		8		1917	75				
1883	298	*All*	Charter city of Albany. [Previous charter, L. 1870, ch. 77.]						
		Tit. 2, § 1		1895	863				
		Tit. 2, § 1		1910	375				
		Tit. 2, § 1, last sentence		1913	584				
		Tit. 2, § 1		....	...	....	1916	41	
		Tit. 2, § 1 (added)		1916	41				
		Tit. 9, § 31		1894	18				
		Tit. 9, § 31		1887	242				
		Tit. 9, § 31		1917	114				
		Tit. 9, § 56 (added)		1886	77				
		Tit. 9, § 56		1886	256				
		Tit. 9, § 56		1891	286				
		Tit. 9, § 56		....	...	....	1912	358	
		Tit. 9, §§ 57–65 (added)		1886	77				
		Tit. 9, §§ 57–65		1886	256				
		Tit. 9, §§ 57–65		....	...	....	1912	358	
		Tit. 21, § 7		1892	171				
		Tit. 21, § 7		1895	806				
		Tit. 21, § 7		1897	170				
		Tit. 21, § 7		....	...	....	1912	359	

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[1] Issue bonds for extending water mains.

[2] Widen Washington street.

[3] Bond issue for construction of jail and police building.

[4] Bond issue to improve South street.

[5] Bond issue for fire department.

[6] Bond issue for protecting South street.

[7] Police pension fund.

[8] Trustees fill vacancies in board.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1883	298	All		1912	10[1]				
		All		1912	11[2]				
		All		1912	392[3]				
		All		1912	358[4]				
		All		1913	781[5]				
		All		1914	142[6]				
		All		1915	374[7]				
		All		1916	9[8]				
		All		1916	11[9]				
		All		1916	98[10].				
		All		1916	214[11]				
		All		1916	325[12]				
		All		1916	401[13]				
		All		1917	448[14]				
		All		1917	451[15]				
1883	496	*All*	Salary of county treasurer of Erie county, amending L. 1881, ch. 557; L. 1882, ch. 74.						
		2		....	...	....	1913	406	1
1884	61	*All*	Board of education of union free school district number one of town of Deerpark, to take proceedings for removal of remains in St. John's burying ground, in village of Port Jervis, to Laurel Grove cemetery.						
		All		....	...	....	1917	786	6
1884	107	*All*	Taxes in Monroe county.						
		4		1893	718				
		4		1916	234				
1884	122	*All*	Changing name of justices' court of city of Albany to City Court of Albany.						
		All		....	...	....	1914	368	389
1884	195	*All*	Charter village of Batavia. [Previous charter, L. 1853, ch. 140; subsequent charter (city), L. 1914, ch. 354.]						
		Tit. 4, § 10		1903	190				
		Tit. 4, § 10		1912	76				
		Tit. 8, § 1		1895	117				
		Tit. 8, § 1		1903	190				
		Tit. 8, § 1		1910	337				
		Tit. 8, § 1		1913	46				
		All		1914	354[16]				

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[1] Power to sell almshouse farm.
[2] Power to sell high school property.
[3] Bond issue to improve river front.
[4] Payment of contractors for city work.
[5] Smoke nuisance abated.
[6] Conduit under waters of Island creek.
[7] Public park.
[8] Sale of real estate to county.
[9] County sell real estate to city.
[10] Uniform rate of taxation.
[11] Exchange of property with the United Traction Company.
[12] Sewer in First avenue.
[13] Penitentiary grounds conveyed to city.
[14] Improvement of Madison place.
[15] Boulevard connecting Washington park and Lincoln park.
[16] City charter.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1884	295	*All*	Expenses of conducting office of clerk of city and county of New York, repealing L. 1882, ch. 410, §§ 1112, 1732.						
		3a (added)		1914	90				
1884	354	*All*	Duties of superintendent of almshouse in city of Albany, and providing for expenses thereof						
		12		1886	387				
		12		1897	708				
		12		1918	109				
1884	368	*All*	Regulating manner of contracting, auditing and paying certain charges against Albany county.						
		12		1918	65				
1884	424	*All*	Incorporating College of Pharmacy of New York city, repealing L. 1831, ch. 264; L. 1856, ch. 42; L. 1871, ch. 134; L. 1878, ch. 172.						
		1		1895	108				
		1		1917	456				
1884	493	*All*	Village of White Plains, Westchester county, amending L. 1867, ch. 518.						
		All		....	...	....	1915	356	307
1884	531	*All*	Office of register of city and county of New York, repealing L. 1882, ch. 410, §§ 1762, 1763						
		5		1916	600				
		9		1887	376				
		9		1916	600				
		All		1913	837[1]				
1885	21	*All*	Union school district in towns of Lysander and Van Buren, Onondaga county, amending L. 1864, ch. 94.						
		All		....	...	....	1916	180	4
1885	26	*All*	Charter city of Syracuse. [Previous charter, L. 1857, ch. 63.]						
		3		1887	368				
		3		1899	361				
		3		1907	553				
		3		1908	170				
		3		1909	324				
		3		1914	282				
		3		1915	527				
		3		1917	429				
		4		1887	368				
		4		1890	110				
		4		1892	571				
		4		1893	3				
		4		1898	81				
		4		1899	361				
		4		1904	105				
		4		1905	185				
		4, subd. 1		1909	324				
		4, subd. 1		1917	429				
		4, subd. 2		1907	553				
		4, subd. 2		1917	429				
		4, subd. 3		1907	553				
		4, subd. 3		1908	170				
		4, subd. 3		1914	282				

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[1] Transfer of certain public records to county of Bronx.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1885	26	4, subd. 3		1917	429				
		4, subd. 4		1907	553				
		4, subd. 4		1908	170				
		4, subd. 4		1917	429				
		4, subd. 10		1909	324				
		4, subd. 10		1917	429				
		4, subd. 13		1909	324				
		4, subd. 13		1917	429				
		4, subd. 17		1915	527				
		4, subd. 17		1917	429				
		9		1895	950				
		9		1902	451				
		9		1918	235				
		174–183		....	...	....	1917	786	6
		183a (added)		1897	750	1			
		183a, subd. 2		1917	152	1			
		183a, subd. 3a (added)		1917	152	2			
		183a, subd. 9		1917	152	3			
		All		1912	187[1]				
		All		1913	370[2]				
		All		1913	715[3]				
		All		1914	299[4]				
		All		1914	300[5]				
		All		1917	397[6]				
		All		1918	145[7]				
		All		1918	477[8]				
1885	74	*All* All	Charter village of Newark, Wayne county	1912	507[9]				
1885	161	*All* All	Collection of taxes in Cayuga county, amending L. 1882, ch. 133.	....	...	....	1914	322	1
1885	313	*All* All	Free union school in village of Saratoga Springs, amending L. 1867, ch. 353.	....	...	....	1917	786	6
1885	332	*All* All	Relief of disabled firemen of city of Albany, amending L. 1883, ch. 173.	....	...	....	1914	285	15
1886	15	*All* 7	Benevolent fund of late volunteer fire department of New York city, amending L. 1866, ch. 633.	....	...	....	1915	387	1
1886	77	*All* All	Government of city of Albany, amending L. 1883, ch. 298	....	...	....	1912	358	5
1886	120	*All* 58, 268	Charter city of Lockport. [Previous charter, L. 1865, ch. 365; subsequent charter, L. 1911, ch. 870.]	....	...	....	1917	786	6

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[1] Sale of real property not required for municipal purposes.

[2] Filing certain maps.

[3] Lift bridge over Erie canal at West Genesee street.

[4] Vocational high school building.

[5] Department of public works.

[6] Park department.

[7] Department for placing dependent children for county of Onondaga.

[8] Canal lands used for street purposes.

[9] Village compensated by state for use of sewer system.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1886	137	*All*	Incorporating State Executive Committee of the Young Men's Christian Associations.						
		2		1895	52				
		2		1917	375				
1886	214	*All*	City of Newburgh, amending L. 1865, ch. 541						
		All		....	...	....	1916	575	198
1886	256	*All*	City of Albany, amending charter, L. 1883, ch. 298; L. 1886, ch. 77.						
		All		....	...	....	1912	358	5
1886	363	*All*	Charter village of Canton, St. Lawrence county. [Previous charter, L. 1865, ch. 545.]						
		All		1917	249[1]				
1886	378	*All*	Village of White Plains, Westchester county, amending L. 1867, ch. 518, and L. 1884, ch. 493.						
		All		....	...	....	1915	356	307
1886	411	*All*	Fund for relief of disabled firemen of city of Albany, amending L. 1883, ch. 173; L. 1885, ch 332.						
		All		....	...	....	1914	285	15
1886	535	*All*	Municipal lodging houses in New York city						
		5		1915	311	1			
1887	66	*All*	City of Newburgh, amending L. 1865, ch. 541						
		All		....	...	....	1916	575	198
1887	107	*All*	Incorporating Nyack fire department and exempting its property from taxation.						
		8		1913	222				
1887	180	*All*	City of Newburgh, amending L. 1865, ch. 541; L. 1881, ch. 515.						
		All		....	...	....	1916	575	198
1887	199	*All*	Consolidating school districts numbers one, three and fifteen, and part of number two, of town of Mount Morris, Livingston county, into one school district, amending L. 1866, ch. 727.						
		All		....	...	....	1918	247	3
1887	279	*All*	Boundaries of union free school district of city of Jamestown, repealing L. 1877, ch. 441.						
		All		....	...	....	1917	786	6
1887	360	*All*	Buffalo Co-operative Brewing Company to reorganize under provisions of L. 1886, ch. 143.						
		All		1918	574[2]				
1887	368	*All*	City of Syracuse, amending L. 1885, ch. 26						
		16		....	...	....	1907	543	
		16		....	...	....	1917	786	6
1887	404	*All*	Incorporating the Auburn Orphan Asylum						
		All		1917	461[3]				
1887	456	*All*	Improving lands occupied by abandoned Chenango canal in city of Utica.						
		All		1915	344[4]				

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[1] Bonds for water system legalized.

[2] Extend corporate existence.

[3] Election of trustees legalized.

[4] Sale of lots.

The italicised matter following each chapter number indicates the part of such chapter treate private and local in its operation.

Statutes				Amended or otherwise affected by			Express
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law
1887	515	*All*	Homeopathic Medical College				
		4	in New York city, amending	1908	150		
		4	L. 1869, ch. 191	1916	289	2	
1887	523	*All*	Portion of members of Concord				
		All	Society of Strykersville to	1914	407[1]		
			form religious corporation.				
1887	609	*All*	System of sewerage and drain-				
		All	age in village of White Plains,	....	...	....	1915
			Westchester county.				
1887	696	*All*	Providing hospitals, orphan				
		1	asylums and other charitable	1894	672		
		1	institutions in New York city	1911	686		
		1	with water	1913	226		
		2		1911	686		
		2		1913	226		
1888	103	*All*	Common schools in village of				
		All	Lockport, amending L. 1847,	....	...	....	1917
			ch. 51.				
1888	203	*All*	Board of education of city of				
		All	Lockport to erect school	1912	431[2]		
			building.				
1888	267	*All*	Consolidating school districts				
		All	numbers one, three and fif-	....	...	....	1918
			teen, and part of district num-				
			ber one of town of Mount				
			Morris, Livingston county,				
			amending L. 1866, ch. 727; L.				
			1887, ch. 199.				
1888	345	*All*	Railroad crossings in city of				
		12	Buffalo	1890	255		
		12		1911	358		
		12		1916	576		
1888	381	All	Public schools in city of Auburn,				
		All	amending L. 1875, ch. 577	....	....	...	1917
1889	15	*All*	Common schools in city of				
		All	Utica, amending L. 1842, ch.	....	...	....	1917
			137; L. 1877, ch. 243.				
1889	18	*All*	City of Syracuse, amending L.				
		All	1885, ch. 26	....	...	....	1917
1889	119	*All*	Charter village of Penn Yan,				
		All	Yates county. [Previous	1917	29[3]		
			charter, L. 1864, ch. 258.				
1889	197	*All*	City of Newburgh, amending L.				
		All	1865, ch. 541; L. 1872, ch. 551.	....	...	....	1916
1889	220	*All*	Schools and academics in village				
		All	of Ogdensburg, amending L.	....	...	....	1917
			1857, ch. 382.				
1889	349	*All*	Recording and indexing instru-				
		3	ments affecting land in New	1890	166		
		3	York city according to city	1914	465		
		All	blocks or other limited areas,	....	...	....	1916
			repealing L. 1887, ch. 718; L.				
			1888, ch. 321.				

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[1] Society authorized to sell property for cemetery upkeep.

[2] Bond issue to repair school building.

[3] Paving Main street legalized.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1889	387	*All*	School building in city of Lockport, amending L. 1888, ch. 203.						
		All		....	...	....	1917	786	6
1889	511	*All*	Charter village of Cooperstown. [Previous charter, L. 1829, ch. 320.]						
		All		1917	22[1]				
		All		1917	35[2]				
1890	15	*All*	School building in city of Lockport, amending L. 1888, ch. 203.						
		All		....	...	....	1917	786	6
1890	60	*All*	Village of White Plains, amending L. 1867, ch. 518						
		All		....	...	....	1915	356	307
1890	166	*All*	Recording and indexing instruments affecting land in city of New York according to city blocks or other limited areas, amending L. 1889, ch. 349.						
		All		....	...	....	1916	514	
1890	215	*All*	Common schools in village of Lockport, amending L. 1847, ch. 51; L. 1873, ch. 623.						
		All		....	...	....	1917	786	6
1890	315	*All*	Village of White Plains, amending L. 1867, ch. 518						
		All		....	...	....	1915	356	307
1890	407	*All*	System of sewerage and drainage in village of White Plains, amending L. 1887, ch. 609.						
		All		....	...	....	1915	356	307
1890	523	*All*	Office of sheriff of city and county of New York						
		1		1891	315				
		1		1894	477				
		1		1897	636				
		1		1911	761				
		1		1912	500				
		1		1913	373				
		1		1916	525				
		1		1917	607				
		5		1894	477				
		5		1897	636				
		5		1916	525				
1890	547	*All*	Office of county clerk of Chautauqua county a salaried office.						
		5		1913	310	1			
1891	4	*All*	Providing for rapid transit railways in cities of over one million inhabitants						
		1		1894	752				
		1		1906	472				
		2		1894	752				
		3		1894	752				
		4		1894	528				
		4		1895	519				
		4		1900	616				
		4		1904	564				
		4		1909	498				
		4		1910	505				
		4		1912	226				
		4		1913	100				
		5		1895	519				

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[1] Issue bonds for street improvement.

[2] Sewer system.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1891	4	5		1904	564				
		5		1905	631				
		5		1909	498				
		6		1892	556				
		6		1894	752				
		6		1895	519				
		6		1896	729				
		6		1902	542				
		6		1906	472				
		6		1909	498				
		6, subd. 1		1910	205				
		7		1894	752				
		7		1895	519				
		7, 8		....	...	....	1909	498	
		9		1892	556				
		9		1894	752				
		9		1895	519				
		9		1909	498				
		10		1894	752				
		10		1909	498				
		10		1912	226				
		11–14		....	...	....	1909	498	
		15		1892	556				
		15–22		....	...	....	1909	498	
		20 (renumbered from 23)		1909	498				
		20		1910	506				
		20		1913	510				
		21 (renumbered from 24)		1909	498				
		22 (added)		1909	498				
		23 (renumbered 20)		1909	498				
		24		1892	556				
		24 (renumbered 21)		1909	498				
		24, subds. 1, 6		1912	226				
		24a (added)		1913	524				
		25		....	...	....	1909	498	
		26		1895	519				
		26–29		....	...	....	1909	498	
		26 (renumbered from 34)		1909	498				
		26, subd. 2		1912	226				
		26, subd. 2		1917	625				
		26, subd. 4		1910	205				
		27 (renumbered from 34a)		1909	498				
		27, subd. 1		1912	226				
		27, subd. 2		1910	504				
		27, subd. 2 (added)		1912	226				
		27, subds. 2–4 (renumbered 3–5)		1912	226				
		27, subd. 5 (renumbered subd. 6)		1912	226				
		27, subds. 6–8 (renumbered subds. 7–9)		1912	226				
		27, subd. 9 (renumbered subd. 10)		1912	226				
		28 (renumbered from 34b)		1909	498				
		28		1910	205				
		29 (renumbered from 34c)		1909	498				
		29, subd. 3		1912	226				
		30		1895	519				
		30, 31		....	...	....	1909	498	
		30 (renumbered from 34d)		1909	498				

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1891	4	30, subd. 2		1914	118				
		32		1895	519				
		32		1902	584				
		32		1906	472				
		32		1906	606				
		32 (renumbered 23)		1909	498				
		32, subd. 3 (added)		1915	534				
		32a (added)		1906	472				
		32a (renumbered 24)		1909	498				
		33		1895	519				
		33		1896	729				
		33		1904	564				
		33 (renumbered 25)		1909	498				
		33 (added)		1909	498				
		33		1912	226				
		34 (renumbered 64)		1894	752				
		34 (as renumbered 64)		1895	519				
		34 (added)		1894	752				
		34		1895	519				
		34		1896	729				
		34		1900	616				
		34		1902	544				
		34		1905	599				
		34		1906	472				
		34 (renumbered 26)		1909	498				
		34 (added)		1909	498				
		34, subd. 2		1912	226				
		34a-34e (added)		1906	472				
		34a-34e (renumbered 27-31)		1909	498				
		34f (added)		1908	472				
		34f (renumbered 32)		1909	498				
		35 (renumbered 65)		1894	752				
		35 (as renumbered 65)		1904	564				
		35 (added)		1894	752				
		35		1896	729				
		35		1900	616				
		35		1905	599				
		35		1906	472				
		35		1909	498				
		36 (renumbered 66)		1894	752				
		36 (added)		1894	752				
		36		1895	519				
		36		1909	498				
		36		1913	540				
		36		1917	625				
		37 (renumbered 67)		1894	752				
		37 (added)		1894	752				
		37		1895	519				
		37		1904	562				
		37		1906	472				
		37		1906	607				
		37		1907	534				
		37		1908	472				
		37		1909	498				
		37		1911	888				
		37, subd. 1		1913	540				

The italicized matter following each chapter number indicates the part of such chapter treate private and local in its operation.

Statutes				Amended or otherwise affected by			Expressl
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law
1891	4	37, subd. 1		1915	544		
		37, subd. 2		1913	540		
		37, subd. 2		1917	625		
		37, subds. 3, 4, 7–10		1915	545		
		37a (added)		1915	590		
		38 (added)		1892	102		
		38 (as added by L. 1892, ch. 102, renumbered 38a)		1895	519		
		38 (added)		1894	752		
		38 (as added by L. 1894, ch. 752)		1895	519		
		38 (as added by L. 1894, ch. 752)		1906	472		
		38		1909	498		
		38		1912	226		
		38a (38 renumbered 38a)		1895	519		
		38a		....	..		
		39 (added)		1894	752		
		39		1895	519		
		39		1896	729		
		39		1901	587		
		39		1904	564		
		39		1906	472		
		39		1909	498		
		39, subd. 1,		1912	226		
		39, subd. 1		1913	524		
		39, subd. 2		1913	540		
		39, subd. 2		1915	544		
		39, subd. 2a (added)		1913	540		
		39, subds. 4, 5 (added)		1910	205		
		39, subd. 4		1913	540		
		39, subd. 4a (added)		1915	543		
		40 (added)		1894	752		
		40		1895	519		
		40		1909	498		
		41 (added)		1894	752		
		41		1895	519		
		41		1909	498		
		42 (added)		1894	752		
		42		1909	498		
		43 (added)		1894	752		
		43		1895	519		
		43		1909	498		
		43		....	...	....	1915
		43 (added)		1915	604		
		44 (added)		1894	752		
		44		1895	519		
		44		1902	533		
		44		1909	498		
		44		....	...	....	1915
		44 (added)		1915	604		
		45, 46 (added)		1894	752		
		45, 46		1909	498		
		45, 46		....	...	....	1915
		45, 46 (added)		1915	604		
		47 (added)		1894	752		
		47		1895	519		
		47		1909	498		

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1891	4	47		....	...	....	1915	604	
		47 (added)		1915	604				
		48-53 (added)		1894	752				
		48-53		1895	519				
		48-53		1909	498				
		48-53		....	...	....	1915	604	
		48-53 (added)		1915	604				
		54 (added)		1894	752				
		54		1909	498				
		54		....	...	....	1915	604	
		54 (added)		1915	604				
		55		1894	752				
		55		1901	587				
		55		1909	498				
		55		....	...	....	1915	604	
		55 (added)		1915	604				
		55		1917	612				
		56 (added)		1894	752				
		56		1909	498				
		56		....	...	....	1915	604	
		56 (added)		1915	604				
		57 (added)		1894	752				
		57		1895	519				
		57		1909	498				
		57		....	...	....	1915	604	
		58 (added)		1894	752				
		58		1909	498				
		58		....	...	....	1915	604	
		59 (added)		1894	752				
		59		1895	519				
		59		1909	498				
		59		....	...	....	1915	604	
		60 (added)		1894	752				
		60		1909	498				
		60 (renumbered 57)		1915	604				
		61 (added)		1894	752				
		61		1895	519				
		61		1909	498				
		61		....	...	....	1915	604	
		61 (renumbered from 66)		1915	604				
		62 (added)		1894	752				
		62		1909	498				
		62		1910	205				
		62		....	...	....	1915	604	
		63 (added),		1894	752				
		63		1895	519				
		63		1909	498				
		63 (renumbered 58)		1915	604				
		64 (34 renumbered 64)		1894	752				
		64 (34 as renumbered)		1895	519				
		64		1906	472				
		64		1909	498				
		64 (renumbered 59)		1915	604				
		65 (35 renumbered 65)		1894	752				
		65 (35 as renumbered)		1904	564				
		65		....	...	....	1906	472	

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressl	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	C
1891	4	65		1909	498			
		65 (renumbered 60)		1915	604			
		66 (renumbered 65)		1906	472			
		66 (renumbered from 67)		1906	472			
		66 (renumbered 61)		1915	604			
		67 (renumbered 66)		1906	472			
		All		1894	752			
		All		1917	642[1]			
		All		1918	586[2]			
1891	105	*All*	Charter city of Buffalo. [Previous charter, L. 1870, ch. 519; subsequent charter, L. 1914, ch. 217.]					
		27		1912	374			
		73		1903	171			
		73		1914	291			
		115		1898	280			
		115		1912	25			
		137		1912	140			
		138		1901	376			
		138		1905	90			
		138		1912	140			
		140		1901	376			
		140		1902	191			
		140		1905	90			
		140		1912	140			
		187		1893	437			
		187		1896	184			
		187		1900	656			
		187		1902	551			
		187		1904	395			
		187		1910	644			
		187		1911	446			
		187		1912	552			
		187		1912	198			
		188		1893	437			
		188		1896	184			
		188		1900	656			
		188		1910	644			
		188		1912	198			
		190		1896	45			
		190		1912	198			
		191		1896	184			
		191		1912	198			
		211		....	...	...		
		211		1895	137			
		211		1910	255			
		211		1911	487			
		211		1912	198			
		211, subd. 3		1899	702			
		211, subd. 3		1902	551			
		211, subd. 3		1904	395			
		211, subd. 3		1905	181			
		211, subd. 3		1914	292			
		250		1912	367			
		323c (added)		1908	52			

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[1] Rights and easements in barge canal terminal lands conveyed to city.

[2] Contracts for completion of rapid transit lines.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1891	105	323c		1912	369				
		324–328		....	...	....	1917	786	6
		329		1893	345	7			
		329		1899	586	1			
		329		1913	13				
		329		....	...	....	1917	786	6
		330		1905	109	1			
		330		....	...	....	1917	786	6
		331–333		....	...	....	1917	786	6
		334		1901	127				
		334		1908	336				
		334, 335		....	...	....	1917	786	6
		336		1899	627				
		336		....	...	....	1917	786	6
		337		1899	627				
		337		1908	336				
		337		....	...	....	1917	786	6
		338		1899	627				
		338		....	...	....	1917	786	6
		339		1908	336				
		339–343		....	...	....	1917	786	6
		343a (added)		1911	386				
		343a		....	...	....	1917	786	6
		344–347		....	...	....	1917	786	6
		348		1892	22				
		348		1894	33				
		348		....	...	....	1917	786	6
		395		1912	412				
		401		1895	805				
		401		1912	146				
		418a (added)		1915	508				
		430		1915	508				
		474		1909	121				
		474		1912	63				
		516 (added)		1911	651				
		516		1917	571	1			
		516a, 516b (added)		1914	124				
		517a (added)		1917	571	2			
		522 (added)		1911	651				
		522		1914	124				
		523a, 531a (added)		1914	124				
		531a		1917	571				
		531b, 531c (add)d		1914	124				
		All		1914	217[1]				
		All		1912	32[2]				
		All		1912	280[3]				
		All		1912	281[4]				
		All		1912	373[5]				
		All		1912	375[6]				

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[1] New charter.

[2] Salary of superintendent of education.

[3] Bond issue to extend water-works system.

[4] Sinking fund water bonds.

[5] Sewer bonds.

[6] Damage claims connected with lands under water may be allowed.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1891	105	All		1912	381[1]				
		All		1913	39[2]				
		All		1913	56[3]				
		All		1913	65[4]				
		All		1913	66[5]				
		All		1913	114[6]				
		All		1913	122[7]				
		All		1913	297[8]				
		All		1913	309[9]				
		All		1913	343[10]				
		All		1914	217[11]				
		All		1915	450[12]				
		All		1915	462[13]				
1891	106	*All*	Charter village of Mechanicville, Saratoga county. [Previous charter, L. 1870, ch. 786; subsequent charter, (city) L. 1915, ch. 170.]						
		Tit. 3, § 5 (added)		1913	409				
		Tit. 5, § 3, subd. 30		1897	140				
		Tit. 5, § 3, subd. 30		1902	273				
		Tit. 5, § 3, subd. 30		1906	84				
		Tit. 5, § 3, subd. 30		1913	264				
		Tit. 5, § 3, subd. 31		1897	140				
		Tit. 5, § 3, subd. 31		1900	459				
		Tit. 5, § 3, subd. 31		1902	273				
		Tit. 5, § 3, subd. 31		1905	101				
		Tit. 5, § 3, subd. 31		1906	84				
		Tit. 5, § 3, subd. 31		1913	264				
		Tit. 7, § 15		1913	264				
		All		1915	170[14]				
		All		1918	476[15]				
1891	134	*All*	Incorporating Church Insurance Association						
		1		1901	554				
		1		1913	156				
		1		1915	464				
		2		1913	156				
		4, 7		1901	554				
		4, 7, 8		1913	156				
		13 (added)		1913	156				

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[1] Bond issue for water-works system.

[2] Water bonds.

[3] Common council and mayor lease lands.

[4] Park commissioners control over Kenilworth avenue.

[5] Lands under water granted to city.

[6] Transfer of city and county hall.

[7] Issue bonds, congress on school hygiene.

[8] Bond issue for insurance fund.

[9] Amends L. 1909, ch. 570, establishing city court..

[10] Issue of bonds for improvements along Scajaquada creek.

[11] Charter revised.

[12] Repaving Chippewa and Georgia streets.

[13] Ceding land to city for street purposes.

[14] New city charter.

[15] Cancellation of garbage contract.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1891	281	*All*	Office of county clerk of Cattaraugus county a salaried office.						
		3		1914	129				
1891	285	*All*	Botanic garden, museum and arboretum in Bronx park in New York city, and incorporating New York Botanical Garden.						
		5a (added)		1914	473				
1891	286	*All*	Government of city of Albany, amending and part repealing L. 1883, ch. 298.						
		27		....	...	....	1912	358	5
1892	22	*All*	City of Buffalo, amending L. 1891, ch. 105.						
		All		....	...	....	1917	786	6
1892	156	*All*	Village of White Plains, Westchester county, to issue bonds for fire apparatus.						
		All		....	...	....	1915	356	307
1892	182	*All*	Charter city of Mount Vernon. [Previous charter, L. 1870, ch. 776.]						
		11		1901	202				
		11		....	...	....	1912	430	
		11 (added)		1912	430				
		23		1901	202				
		23		....	...	....	1912	430	
		23 (added)		1912	430				
		51		1916	476				
		56, subd. 4 (added)		1916	310				
		62, 85		1916	310				
		97		1901	474				
		97		1914	225				
		104, 108		1916	310				
		128		1904	695				
		128		1912	410				
		133, 135		1917	427				
		136		1896	692				
		136		1917	427				
		158		1901	329				
		158		1913	99				
		166, subd. 7a (added)		1918	101				
		168		1915	222				
		182		1886	692	20			
		182		1915	222				
		201		1896	692				
		201		1900	275				
		201		1905	374				
		201		1918	203				
		229		1894	10				
		229		....	...	....	1917	786	6
		229a–229c (added)		1894	10				
		229c		1895	243				
		229d–229i (added)		1894	10				
		229i, subds. 12, 13		1895	189				
		229i, subd. 15		1896	146				
		229j (added)		1894	10				
		229j		1911	77				
		229j, subd. 5		1896	146				
		229j, subd. 5		1901	285				
		229j, subd. 5		1903	46				

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1892	182	229j, subd. 5		1907	165				
		229j, subd. 5		1910	49				
		229k (added)		1894	10				
		229k		1896	146				
		229k		1901	473				
		229k		1908	41				
		229l–229r (added)		1894	10				
		229s (added)		1895	189				
		229a–229s		....	...	....	1917	786	6
		229t (added)		1909	92				
		229t		1913	44				
		229u		1913	44				
		250a (added)		1915	63				
		All		1912	356[1]				
		All		1914	432[2]				
		All		1915	612[3]				
		All		1916	133[4]				
		All		1916	311[5]				
1892	355	*All*	Consolidating school districts numbers one, three and fifteen, and part of district number two of town of Mount Morris, Livingston county, amending L. 1866, ch. 727.						
		All		....	...	....	1918	247	3
1892	439	*All*	Care and reformation of females, and concerning public interests in city of Brooklyn.						
		1		1914	213				
1892	542	*All*	System of block tax assessment maps and records in New York city.						
		All		....	...	....	1916	491	4
1892	566	*All*	Taxes in Oswego county, amending L, 1882, ch. 322						
		All		....	...	....	1914	387	1
1892	626	*All*	City of Syracuse, amending L. 1885, ch. 26						
		5		....	...	....	1907	543	
		5		....	...	....	1917	786	6
1892	653	*All*	Collection of state and county taxes in city of Troy, repealing in part L. 1848, ch. 12; L. 1849, ch. 210; L. 1877, ch. 68; L. 1886, ch. 1.						
		13		1893	653	1			
		All		....	...	....	1915	472	1
1892	670	*All*	Charter city of Troy. [Previous charter, L. 1872, ch. 129.]						
		Tit. 4, § 14		1913	671				
		Tit. 7, §§ 1, 2		....	...	....	1915	471	1
		Tit. 7, §§ 1, 2 (added)		1915	471				
		Tit. 7, § 3		....	...	....	1915	471	1
		Tit. 7, § 3 (added)		1915	471				
		Tit. 7, § 3		1916	273				
		Tit. 7, §§ 4–6		....	...	....	1915	471	
		Tit. 7, §§ 4–6 (added)		1915	471				
		Tit. 7, § 7		1893	575				

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[1] Bond issue for acquisition of New York and Harlem Railroad right of way.
[2] Fire department pension fund.
[3] Abolishes office of justice of the peace.
[4] Bond issue to meet temporary deficiencies.
[5] Bond issue for repaving Columbus avenue.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1892	670	Tit. 7, § 7		....	...	....	1915	471	
		Tit. 7, § 7 (added)		1915	471				
		Tit. 7, §§ 8, 9		....	...	....	1915	471	
		Tit. 7, §§ 8, 9 (added)		1915	471				
		Tit. 7, § 8		....	...	....	1918	209	
		Tit. 7, § 9		1918	209				
		Tit. 7, § 10		1893	575				
		Tit. 7, § 10		....	...	....	1915	471	
		Tit. 7, § 10 (added)		1915	471				
		Tit. 7, § 11		1893	575				
		Tit. 7, § 11		....	...	....	1915	471	
		Tit. 7, § 11 (added)		1915	471				
		Tit. 7, § 11		1918	209				
		Tit. 7, § 12		....	...	....	1915	471	
		Tit. 7, § 12, 12a, 12b (added)		1915	471				
		Tit. 7, § 12c (added)		1915	471				
		Tit. 7, § 12c		1918	209				
		Tit. 7, §§ 12d–12j (added)		1915	471				
		Tit. 7, § 12k (added)		1915	471				
		Tit. 7, § 12k		1918	209				
		Tit. 7, §§ 12l, 12m (added)		1915	471				
		Tit. 7, § 23 (added)		1915	471				
		All		1913	609[1]				
		All		1913	285[2]				
		All		1913	288[3]				
		All		1915	647[4]				
		All		1916	563[5]				
		All		1918	135[6]				
1892	671	*All*	Charter city of Cohoes. [Previous charter, L. 1869, ch. 912; subsequent charter, L. 1915, ch. 130.]						
		Tit. 5, § 59		1912	350				
		Tit. 6, §§ 1–125		....	...	....	1917	786	6
		All		1915	130				
		All		1912	259[7]				
		All		1912	349[8]				
1893	10	*All*	Common schools in city of Utica, amending L. 1842, ch. 137.						
		All		....	...	....	1917	786	6
1893	49	*All*	Sewer in city of Newburgh.						
		All		1912	284[9]				
		All		1912	413[10]				
1893	87	*All*	Charter city of Ogdensburg. [Previous charter, L. 1881, ch. 95.]						
		4		1894	395				
		4		1906	494				
		4		1915	525				
		5		1894	395				

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[1] Payments to injured volunteer firemen.
[2] Bonds for public improvements.
[3] Bonds for water-works department.
[4] City court act.
[5] Harbor and dock commission.
[6] Appropriation to reimburse city.
[7] Audit and pay cash for sewer in alley between Maple avenue and Locust avenue.
[8] Legalizing proceedings in paving Vine street.
[9] Tax certificates cancelled.
[10] Cancellation of tax certificates.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1893	87	5		1906	494				
		5		1915	525				
		6		1906	494				
		6		1915	525				
		8		1894	395				
		8		1906	494				
		8		1915	525				
		9		1906	494				
		9		1915	525				
		10		1894	395				
		10		1915	525				
		11		1894	395				
		11		1906	494				
		11		1915	525				
		12		1894	395				
		12		1915	525				
		14, subd. 3		1915	525				
		15		1915	525				
		16		1894	395				
		16		1915	525				
		18		1894	395				
		18		1906	494				
		18		1915	525				
		19, subd. 1		1906	494				
		19, subd. 1		1915	525				
		19, subds. 6, 8		1915	525				
		19, subd. 14		1903	208				
		19, subd. 14		1912	85				
		19, subd. 14		1915	525				
		19, subd. 15		1903	208				
		19, subd. 15		....	...	....	1912	85	
		19, subds. 16, 17		1915	525				
		20		1894	395				
		20		1906	494				
		20		1915	525				
		21		1906	494				
		21		1915	525				
		22		1915	525				
		25, subds. 5, 11		1915	525				
		25, subd. 16		....	...	....	1915	525	
		25, subds. 18, 25		1915	525				
		25, subd. 26		1906	494				
		25, subd. 26		1915	525				
		26		1915	525	23			
		28		....	...	....	1915	525	24
		28 (added)		1915	525	24			
		31		1894	395				
		31, 32		....	...	....	1915	525	25
		31, 32 (added)		1915	525	25			
		33		1894	395				
		33		1915	525	26			
		34		1915	525	27			
		38a (added)		1915	112				
		39		1915	525				
		Tit. 6, caption		1915	525	29			
		43		1915	525	30			

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1893	87	44a–44c (added)		1915	525	31			
		45		....	...	....	1915	525	
		45 (added)		1915	525				
		46		1894	395				
		46, 47		....	...	....	1915	525	32
		46–47 (added)		1915	525	32			
		47a (added)		1916	304				
		49		1918	217				
		50		1894	395				
		50		1915	525				
		51–54		....	...	....	1915	525	
		51–54 (added)		1915	525				
		54a (added)		1914	339				
		54a		....	...	....	1915	525	
		54a–54l (added)		1915	525				
		68		1898	299				
		68		1915	525				
		73		1898	299				
		73		1915	525				
		80		1894	395				
		80		1906	494				
		80		1915	525				
		81, 86, subd. 3		1915	525				
		89, subd. 6 (added)		1905	579				
		89, subd. 6		1915	525				
		89a–89g (added)		1915	525				
		89h		1916	285				
		89h		1917	252				
		89i (added)		1917	252				
		89j (added)		1918	218				
		93		1894	395				
		93		1915	525				
		94a (added)		1917	450				
		94b (added)		1918	208				
		97a (added)		1915	525				
		106		1915	525				
		110		1894	395				
		110		1906	494				
		110		1915	525				
		112, subd. 1		1894	395				
		112, subd. 1		1915	525				
		112, subd. 2		1894	395				
		112, subd. 2		1905	579				
		112, subd. 2		1915	525				
		112, subd. 4		1894	395				
		112, subd. 4		1915	525				
		112, subd. 5		1894	395				
		112, subd. 5		1915	525				
		112, subd. 6		1894	395				
		112, subd. 6		1915	525				
		112, subd. 7		1894	395				
		112, subd. 7		1915	525				
		112a (added)		1915	525				
		114a (added)		1915	525				
		118 (added)		1912	85	1			

The italicised matter following each chapter number indicates the part of such chapter treated as private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly re by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1893	87	All		1912	84[1]			
		All		1915	86[2]			
		All		1915	542[3]			
1893	216	*All*	Free schools in village of Newburgh, amending L. 1865, ch. 88; amendatory of L. 1852, ch. 156.					
		All		....	...	....	1917	786
1893	249	*All*	Incorporating Pythian Home.					
		7		1914	19			
1893	345	*All*	City of Buffalo, amending L. 1891, ch. 105.					
		7		....	...	....	1917	786
1893	381	*All*	Schools and academies in village of Ogdensburgh, amending L. 1857, ch. 382.					
		All		....	...	....	1917	786
1893	410	*All*	Incorporating New York City Baptist Mission Society					
		1		1912	304			
1893	428	*All*	City of Newburgh, amending L. 1865, ch. 541					
		All		....	...	....	1916	575
1893	429	*All*	Compilation, continuance and care of certain indexes and records in Albany county clerk's office					
		1		1896	268	1		
		1		1899	471	1		
		1		1912	288	1		
		3		1896	268	3		
		3		1899	471	3		
		3		1903	474	1		
		3		1906	232	1		
		3		1909	130	2		
		3		1912	288	2		
1893	454	*All*	School commissioners of city ot Ogdensburgh, and their term of office					
		1, 3		1906	495			
		1, 3		1917	449	1		
		All		....	...	....	1917	786
1893	478	*All*	Charter city of Olean. [Previous charter (village), L. 1882, ch. 110; subsequent charters, L. 1914, ch. 436; L. 1915, ch. 535.]					
		All		....	...	....	1914	436
		All		....	...	....	1915	535
		All		1915	522[4]			
		All		1915	530[5]			
1893	520	*All*	Office of county clerk of Onondaga county a salaried office.					
		3		1896	512			
		3		1897	14			
		3		1912	244			
1893	524	*All*	Submitting to electors of city of Syracuse question of furnishing free textbooks.					
		All		....	...	....	1917	786
1893	531	*All*	City of Syracuse, amending L. 1885, ch. 26.					
		20–24		....	...	....	1907	543
		20–24		....	...	....	1917	786

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[1] Bond issue for improving streets.

[2] Bond issue.

[3] Bond issue for raising or lowering railroad tracks.

[4] Cancellation of unpaid assessments.

[5] Bond issue for paving.

The *italicized* matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1893	536	*All*	Indexing instruments relating						
		3, 10	to land and liens thereon, and	1915	599				
			and indexing and compiling						
			arrears of taxes, assessments,						
			water rents and unredeemed						
			sales and unexpired leases						
			therefor, in city and county						
			of New York.						
1893	666	*All*	Charter village of Canandaigua,						
		Tit. 6,	Ontario county. [Previous						
		§§ 20,	charter L. 1815, ch. 254; sub-						
		22, 24	sequent, charter L. 1913, ch.	1912	279				
		Tit. 6, § 25	371.]	1902	264				
		Tit. 6, § 25		1906	229				
		Tit. 6, § 25		1912	279				
		All		....	...	....	1913	371	251
1894	10	All	City of Mount Vernon, amend-						
		All	ing L. 1892, ch. 182	....	...	....	1917	786	6
1894	33	*All*	City of Buffalo, amending L.						
		All	1891, ch. 105	....	...	....	1917	786	6
1894	36	*All*	Supplying city of Auburn with						
		21	water, supplementing L. 1892,	1906	386				
		21	ch. 479	1914	141				
1894	131	*All*	Village of Canandaigua, amend-						
		All	ing L. 1893, ch. 666	....	...	....	1913	371	251
1894	160	*All*	Office of sheriff of Niagara						
		1	county a salaried office	1918	416				
1894	206	*All*	Village of White Plains, West-						
		All	chester county, to issue bonds.	....	...	....	1915	356	307
1894	255	*All*	City of Newburgh, amending						
		All	L. 1865, ch. 541	....	...	....	1916	575	198
1894	257	*All*	Salaries of commissioners of ex-						
		All	cise of city of Newburgh	....	...	....	1916	575	198
1894	365	*All*	Indexing instruments relating						
		10	to lands and liens thereon in	1916	376				
		15	Kings county	1909	344				
		15		1915	405				
		16, 18		1914	502				
		19a (added)		1918	623				
1894	454	*All*	Schools and academies in village						
		All	of Ogdensburg, amending L.	....	...	....	1917	786	6
			1857, ch. 382.						
1894	480	*All*	Charter village of Fredonia.						
		Art. 2, § 1	[Previous charter, L. 1881, ch.	1917	7	1			
		Art. 2, § 3	383.]	1905	21				
		Art. 2, § 3		1917	7	2			
		Art. 2, § 4		1917	7	3			
		Art. 2, § 5		1917	7	4			
		Art. 2, § 8		1917	7	5			
		Art. 2, § 9		1917	7	6			
		Art. 2, § 11		1917	7	7			
		Art. 2, § 14, subds. 2, 10, 11, 12		1917	7	8			
		Art. 2, § 22 (added)		1917	7	9			
		Art. 4, § 15		1900	67	2			
		Art. 4, § 15		1917	7	10			
		Art. 4, § 16		1917	7	11			

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1894	480	Art. 5, § 1		1902	62	8			
		Art. 5, § 1		1917	7	12			
		Art. 5, § 3		1917	7	13			
		Art. 8, §§ 7–10 (added)		1916	55				
		Art. 9, § 2		1902	62	7			
		Art. 9, § 2		1917	7	14			
		Art. 9, § 5		1917	7	15			
		Art. 9, § 6		1917	7	16			
		Art. 10, § 1		1917	7	17			
1894	557	*All*	Commissioner of jurors in coun-						
		1	ties containing cities of be-	1896	679				
		All	tween ninety and ninety-six	1900	320	2			
		All	thousand inhabitants	1913	553[1]				
1895	3	*All*	City of Newburgh, amending L.						
		All	1865, ch. 541				1916	575	198
1895	25	*All*	Better administration of justice						
		16	in town of Whitehall, Wash-	1896	846				
		16	ington county	1917	455				
1895	79	*All*	Bonds not to exceed nine mil-						
		All	lions of dollars for improve-	1912	115[2]				
		All	ment of Erie, Champlain and	1912	116[3]				
		All	Oswego canals, and submis-	1914	194[4]				
			sion of same to vote.						
1895	91	*All*	The Society of the War of Eigh-						
		16–18	teen Hundred and Twelve.						
		(added)		1913	513	1			
1895	106	*All*	Incorporating the Grand Court						
		Title	of the State of New York of	1916	237				
		3	the Ancient Order of Forest-	1915	435				
		3	ers of America	1916	237				
		6		1915	435				
1895	109	*All*	Village of White Plains, West-						
		All	chester county, amending and				1915	356	307
			part repealing L. 1867, ch.						
			518; L. 1890, ch. 315.						
1895	123	*All*	Education in village of Hornells-						
		All	ville, Steuben county, amend-				1917	786	6
			ing L. 1873, ch. 386.						
1895	189	*All*	Legalizing the action of the						
		All	town board of town of Dun-				1917	786	6
			kirk, Chautauqua county, in						
			changing name and bound-						
			aries of certain election dis-						
			tricts.						
1895	315	*All*	Charter village of Ilion. [Pre-						
		1, 26	vious charter, L. 1865, ch.	1916	24				
		33	90.]	1915	396				
		34		1903	185				
		34		1907	635				
		34		1915	396				

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[1] Office of commissioner of jurors of Rensselaer county abolished.
[2] Appropriation to pay portion of principal.
[3] Appropriation to pay interest.
[4] Transfer of surplus.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1895	315	56, subd. 5		1915	396				
		All		1913	531[1]				
1895	317	*All*	Consolidating Commission on Battlefields and Monuments of Gettysburg and Commission on Battlefield of Chattanooga.						
		All		1912	227[2]				
		All		1913	550[3]				
1895	355	*All*	Incorporating "Children's Aid Society of Rochester."						
		7		1898	479				
		7		1915	123				
1895	369	*All*	Commissioner of jurors; jury lists and jurors in counties of three hundred thousand or over						
		20		1901	230				
		20		1911	690				
		20		1912	147				
1895	370	*All*	Public schools in city of Elmira.						
		All		....	...	....	1917	786	6
1895	394	*All*	Charter city of Oswego. [Previous charter, L. 1860, ch. 463.]						
		1		1902	207				
		1		1915	349				
		4		1902	207				
		4		1906	300				
		4		1915	349				
		5		1897	263				
		5		1902	207				
		5		1915	349				
		39, subd. 46 (added)		1915	349				
		67		1897	263				
		67		1915	577				
		102		1915	578				
		110		1897	263				
		110		1914	402				
		115		1914	227				
		119		1902	207				
		119		1915	349				
		Tit. 8a, §§ 213a–213g (added)		1904	285				
		Tit. 8a, §§ 213a–213g		1915	575				
		156–165		1899	304				
		156–165		....	...	....	1917	786	6
		165, subd. 5		1903	249				
		165, subd. 5		....	...	....	1917	786	6
		166		1897	263				
		166		1899	304				
		166		....	...	....	1917	786	6
		167–169		1899	304				
		167–169		....	...	....	1917	786	6
		170		1897	263				
		170		1899	304				
		170		....	...	....	1917	786	6
		171, 172, 175–177		1899	304				
		171–177		....	...	....	1917	786	6
		190		1917	478				
		255		1917	599				

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[1] Legalizing bond issue for paving streets.

[2] Gettysburg's fiftieth anniversary.

[3] Gettysburg and Chattanooga Commission abolished; new commission formed.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1895	394	260, subd. 8c (added)		1915	349				
		260, subd. 9		1915	576				
		274		1902	207				
		274		1915	349				
		330a (added)		1911	370				
		330a		1912	411				
		330a		1913	282				
		330b–330j (added)		1912	411	2			
		330k (added)		1912	411	2			
		330k		1913	282				
		330l (added)		1913	282				
		Tit. 17 (§§ 409–416) added		1915	349				
		All		1916	481[1]				
		All		1918	487[2]				
1895	435	*All*	Incorporating New York Zoological Society.						
		7a (added)		1917	665				
1895	526	*All*	School district number nine in town of Pomfret, a union free school district, amending L. 1858, ch. 34.						
		All		....	...	....	1917	786	6
1895	554	*All*	City of Newburgh, amending and in part repealing L. 1865, ch. 541.						
		All		....	...	....	1916	575	198
1895	565	*All*	Charter city of Little Falls. [Previous charter (village, Rockton), L. 1850, ch. 330.]						
		5		....	...	....	1917	786	6
		11		1898	199				
		11		1901	470				
		11		1918	91				
		17		1898	199				
		17		1907	123				
		17		1912	197				
		17		1918	91				
		42		....	...	....	1917	786	6
		53		1898	199				
		53		1899	289				
		53		1902	271				
		53		1904	595				
		53		1905	464				
		53		1907	124				
		53		1909	179				
		53		1918	91				
		68		1898	199				
		68		1901	470				
		68		1914	337				
		145		1914	336				
		All		1915	540[3]				
1895	618	*All*	Inclosing family burial lot upon which are interred remains of General Nicholas Herkimer, and erecting monument to his memory.						
		All		....	...	....	1918	198	2

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[1] Payment of Arthur Owens' salary.
[2] Water department.
[3] Legalizing bond issue.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1895	620	*All*	Incorporating the Order of the Eastern Star						
		All		1916	56[1]				
1895	695	*All*	City of Olean, amending L. 1893, ch. 478						
		All		....	...	....	1914	436	
		All		....	...	....	1915	535	136
1895	710	*All*	Office of comptroller of city of Mount Vernon						
		1		1901	69				
		1		1910	76				
		1		1914	295				
1895	747	*All*	Paving of streets in village of White Plains, Westchester county.						
		All		....	...	....	1915	356	307
1895	751	*All*	Charter city of Hudson. [Previous charter, L. 1872, ch. 468.]						
		7, 9–14, 16, 20							
		29, 38		1913	63				
		79		1899	694				
		79		1905	559				
		79, subd. 5		1911	684				
		79, subd. 5		1918	454				
		144–150		....	...	....	1917	786	6
		150a–150c (added)		1907	130				
		150a–150c		....	...	....	1917	786	6
		151		1913	314				
		151		1914	228				
		151–155		....	...	....	1917	786	6
		185		1905	559				
		185		1911	684				
		185		1918	454				
		All		1913	64[2]				
		All		1915	528[3]				
		All		1915	529[4]				
1895	785	*All*	Charter village of Bath, Steuben county. [Previous charter, L. 1851, ch. 264.]						
		Tit. 5, § 9		1912	365				
		All		1915	65[5]				
1895	766	*All*	City court of Albany, and fixing terms of justices, supplementing L. 1883, ch. 298						
		All		....	...	....	1910	603	
		All		....	...	....	1914	368	389
1895	831	*All*	Free schools in village of Newburgh, Orange county, amending L. 1865, ch. 88.						
		All		....	...	....	1917	786	6
1895	912	*All*	Abolishing department of public charities and correction in New York city, and establishing department of public charities and department of correction, supplementing L. 1882, ch. 410.						
		7		1914	73				

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[1] Consolidating several affiliated organizations.

[2] Bond issue for street improvement.

[3] Annexing land in town of Greenport.

[4] Land in city cemetery transferred to fire department.

[5] Improvement of certain streets as parts of state highway.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1895	950	*All*	City of Syracuse, amending and						
		23–27	part repealing L. 1885, ch. 26.				1907	543	
		23–27					1917	786	6
1895	998	*All*	Common schools in city of						
		All	Utica, amending L. 1850, ch.				1917	786	6
			66.						
1895	1032	*All*	Common schools in city of						
		All	Utica, amending L. 1842, ch.				1917	786	6
			137.						
1896	63	*All*	Funds to relieve poor in town						
		All	of Moriah, Essex county				1915	202	11
1896	161	*All*	Common schools in village of						
		All	Lockport, amending L. 1847,				1917	786	6
			ch. 51.						
1896	417	*All*	City of Newburgh, amending						
		All	L. 1865, ch. 541				1916	575	198
1896	372	*All*	Elevated railways on Adams						
		All	street in city of Brooklyn				1913	525	1
1896	392	*All*	Commitment and discharge of						
		1	certain prisoners, tramps and	1911	701				
		1	vagrants in Richmond county	1916	83				
		1	and duties and compensation	1917	473				
			of sheriff and certain employees.						
1896	425	*All*	Charter city of Poughkeepsie.						
		64	[Previous charter, L. 1883, ch.	1905	652				
		64	523.]	1910	632				
		64		1916	142				
		99		1899	563				
		99		1911	685				
		99		1916	142				
		100		1900	659	4			
		100		1905	652	20			
		100, subds. 3, 4		1908	109	1			
		100		1910	632	48			
		100		1911	685	12			
		100, subd. 4		1916	142				
		103, subd. 7		1898	232				
		103		1899	563				
		103, subd. 7		1911	685				
		103, subd. 7		1910	632				
		103, subd. 7		1915	456				
		105		1910	632				
		105		1914	425				
		105		1917	115				
		111		1898	232				
		111		1899	563				
		111		1910	632				
		111		1911	685				
		111		1916	142				
		113		1900	659				
		113		1916	142				
		114		1910	632				
		114		1911	685				
		114		1916	142				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1895	950	115		1899	563				
		115		1915	436				
		116		1899	563				
		116		1910	632				
		116		1911	685				
		116, subd. 2		1916	142				
		117		1899	563				
		117		1910	632				
		117		1911	685				
		117		1916	142				
		161-169		....	...	....	1917	786	6
1896	710	*All*	Public schools in city of Elmira,						
		All	amending, L. 1895, ch. 370	....	...	....	1917	786	6
1896	747	*All*	Charter city of Kingston. [Pre-						
		6	vious charter, L, 1872, ch.	1915	611				
		8	150.]	1906	411				
		8		1915	611				
		8		1916	464				
		11-13		1906	411				
		11-13		1911	617				
		11-13		1915	611				
		14		1906	411				
		14		1907	704				
		14		1911	617				
		14		1915	611				
		14		1916	464				
		15		1906	411				
		15		1907	704				
		15		1911	617				
		15		1915	611				
		15		1916	464				
		16		1907	704				
		16		1911	617				
		16		1915	611				
		18		1911	617				
		18		1915	611				
		18		1916	464				
		19		1907	704				
		19		1915	611				
		20		1911	617				
		20		1915	611				
		20		1916	464				
		21		1911	617				
		21		1915	611				
		22		1915	611				
		26a (added)		1916	464				
		29		1915	611				
		29a (added)		1915	611				
		30		1906	411				
		30		1915	611				
		31		1915	611				
		32a (added)		1915	611				
		33		1911	617				
		33		1915	611				
		35		1900	159				
		35		1911	617				

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressl b	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	C
1896	747	35		1916	464			
		38		1915	611			
		38		1916	464			
		39		1915	611			
		46–48, 50–73, 73a, 74		....	...	....	1915	6
		54–57, 57a, 58, 59, 59a–59c, 60, 60a, 60b, 61–63, 63a, 63b, 64, 64a, 65–73 (added)		1915	611			
		75		1906	411			
		75		1915	611			
		79		1915	611			
		80		1907	704			
		80		1911	617			
		80		1915	611			
		82		1910	647			
		82		1915	611			
		86, 92, 102		1915	611			
		106		1907	704			
		106		1909	567			
		106		1911	617			
		106		1915	611			
		Tit. 10, § 113b (added)		1915	611			
		114		1915	611			
		115		1916	464			
		115 (added)		1906	108			
		151a		....	...	....	1915	6
		117		1907	704			
		117		1911	617			
		117		1915	611			
		117		1916	464			
		120, subd. 5		1915	611			
		120, subd. 7		1907	704			
		120, subd. 7		1915	611			
		120, subd. 23		1915	611			
		120, subds. 24–30, 35, 40, 41, 41a, 42, 44, 47, 49a		....	...	....	1915	6
		122		1907	704			
		122		1915	611			
		122		1916	464			
		122		1918	206			
		123		1911	617			
		123		1915	611			
		124		1900	159			
		124		1902	494			
		124		1907	704			
		124, subd. 3		1909	532			
		124, subds. 6, 8		1911	617			
		124, subd. 9		1909	567			
		124		1915	611			
		125		1907	704			
		125		1915	611			
		128, 129		1916	464			
		Tit. 13, (§§ 144–146)		1915	611			
		147		1911	617			
		147		1915	611			
		147		1916	464			
		148, 149, 149a, 150, 150a		1915	611			

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1896	747	151		1899	593				
		151		1900	168				
		151		1911	617				
		151, 151a, 152		1915	611				
		161–163					1917	786	6
		164					1915	611	
		164–171					1917	786	6
		172 (added)		1902	494				
		172		1915	611				
		172		1916	464				
		172					1917	786	6
		173 (added)		1902	494				
		173		1915	611				
		173, 174					1917	786	6
		175 (added)		1902	494				
		175		1915	611				
		175		1916	464				
		175					1917	786	6
		176–181 (added)		1902	494				
		176–181					1917	786	6
		All		1918	33[1]				
1896	768	*All*	Village of White Plains, amending						
		All	L. 1867, ch. 518				1915	356	307
1896	769	*All*	Supplying village of White						
		All	Plains with water				1915	356	307
1896	772	*All*	Office of district attorney of						
		2	Kings county, repealing L.	1916	187				
		3	1892, ch. 105	1900	126				
		3		1901	556				
		3		1911	409				
		3		1913	401				
		3		1914	468				
		6a (added)		1917	804				
1896	803	*All*	Plumbing in New York city.						
		All					1913	752	
1896	989	*All*	Office of county clerk in New						
		1	York county	1915	720	1			
1897	59	*All*	Public building in New York						
		Pt	city, repealing L. 1890, ch. 299; L. 1893, ch. 514.	1915	582	2[2]			
1897	202	*All*	Board of supervisors of Oneida						
		1–4	county to designate a board	1915	421				
		5	of equalization	1898	535				
		5		1901	259				
		5		1915	421				
		6, 7		1915	421				
1897	290	*All*	Office of supervisor in Oswego						
		1	county a salaried office	1915	92				

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[1] Kingston academy property transferred to city.

[2] Repealing inconsistent provisions of L. 1897, ch. 59.

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly b	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	C
1897	359	*All*	Charter city of Rensselaer. [Includes village of Greenbush, charter, L. 1890, ch. 133; subsequent charter, L. 1913, ch. 481.]					
		All		....	...	....	1913	48
1897	360	*All*	Charter city of Geneva. [Previous charter (village), L. 1871, ch. 65.]					
		30		1917	373	1		
		56		1917	373	2		
		68		1917	373	3		
		144		1899	31	1		
		144		1917	373	4		
		145		1899	614			
		145		1910	560			
		145		1917	373			
		147		....	...	....	1917	37
		147 (added)		1917	373	6		
		148a (added)		1917	373	7		
		Tit. 17, § 166 (added)		1911	391	1		
		166		1916	288			
		Tit. 17, § 167 (added		1911	391			
		167, subd. c		1916	288			
		167, subds. d, e (added)		1916	288			
		All		1913	427[1]			
		All		1913	830[2]			
1897	362	*All*	Office of sheriff of Yates county a salaried office					
		6		....	...	....	1915	6
1897	372	*All*	Board of education of city of Lockport to improve old school building, supplementing L. 1847, ch. 51.					
		All		....	...	....	1917	78
1897	402	*All*	Common schools in village of Lockport, amending L. 1847, ch. 51.					
		All		....	...	....	1917	78
1896	416	*All*	Free schools in village of Newburgh, amending L. 1852, ch. 156.					
		All		....	...	....	1917	78
1897	431	*All*	Charter village of Nunda, Livingston county. [Previous charter, L. 1866, ch. 848.]					
		56		1914	82			
		57		1914	82			
		58		1901	363			
		58		1914	82			
1897	479	*All*	School district number nine in town of Pomfret, amending L. 1858, ch. 34.					
		All		....	...	....	1917	78
1897	649	*All*	Register of city and county of New York to destroy certain records of register's office.					
		All		....	...	....	1915	49
1897	752	*All*	Board of education of city of Syracuse					
		All		....	...	....	1907	54
		All		....	...	....	1917	78
1897	760	*All*	Charter city of Watertown. [Previous charter, L. 1869, ch. 714.]					
		10		1918	601			
		13		1910	500			

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[1] Geneva high school district.

[2] Bond issue for filtration plant legalized.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1897	760	13		1918	601				
		58		1905	485				
		58		1908	327				
		58		1918	447				
		73		1918	601				
		Tit. 8, sub-title		1918	601				
		84, 85		....	...	....	1917	786	6
		86, subd. 10		1903	399				
		86, subds. 1–12		....	...	....	1917	786	6
		87–91		....	...	....	1917	786	6
		92		1903	399				
		92		1905	486				
		92		1914	4				
		92		....	...	....	1917	786	6
		92		1918	446				
		93–97, 99		....	...	....	1917	786	6
		109		1903	399				
		109		1915	539				
		113, 114		1918	601				
		115		1901	203				
		115		1902	567				
		115, 116, 118–132, 134, 135		1918	601				
		136		1903	399				
		136		1918	601				
		143		1909	289				
		143		1915	538				
		158a (added)		1905	485				
		158a, subds. 5, 6 (added)		1909	289				
		158a		1915	538				
		158b, 158c (added)		1905	485				
		158b, 158c, subds. 1, 4, 6		1915	538				
		158d–158f		1915	538				
		176, subd. 4		1905	485				
		176		1908	327				
		176		1908	523				
		176		1914	4				
		176, subd. 7		1918	601				
		177		1908	327				
		177		1909	251				
		177		1918	601				
		178		1914	1				
		179		1914	1				
		180		1903	399				
		180		1904	219				
		180		1914	1				
		181		1914	1				
		185		1914	1				
		187		1914	1				
		189		1914	1				
		190		1910	500				
		190		1914	1				
		206		1914	303				
		210		1903	399				
		210		1908	327				
		210		1910	500				
		210		1915	539				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1897	760	213		1914	1				
		215		1903	399				
		215		1916	204				
		216		1908	327				
		216		1910	500				
		216		1916	204				
		218		1908	327				
		218		1911	256				
		218		1914	302				
		219		1908	327				
		219		1911	256				
		219		1914	302				
		230		1910	500				
		230		1918	232				
1898	48	*All*	City of Syracuse, amending L. 1885, ch. 26						
		All					1907	543	
		All					1917	786	6
1898	76	*All*	Abandoning Jubilee water system in Buffalo						
		3, 4		1912	551				
1898	87	*All*	City of Newburgh, amending L. 1865, ch. 541						
		All					1916	575	198
1898	142	*All*	City of Olean, amending L. 1893, ch. 478						
		All					1914	466	
		All					1915	535	136
1898	143	*All*	Baptist Missionary Convention of the State of New York, amending L. 1817, ch. 128; L. 1825, ch. 170; L. 1841, ch. 131;, L. 1862, ch. 41; L. 1887, ch. 81.						
		1–5		1916	138				
1898	148	*All*	Taxes in Oswego county, amending L. 1882, ch. 322						
		All					1914	387	1
1899	151	*All*	Election of county treasurer of Niagara county						
		All					1912	234	
1898	226	*All*	City of Rensselaer, amending L. 1897, ch. 359						
		All					1913	481	435
1898	230	*All*	Public administration for New York county						
		18		1915	533	1			
		24, subd. 14		1917	695				
1898	232	*All*	City of Poughkeepsie, amending and repealing, in part, L. 1896, ch. 425.						
		6					1917	786	6
1898	291	*All*	Stenographer to city court of Albany, supplementing L. 1884, ch. 122						
		All					1910	603	389
		All					1914	368	389
1898	298	*All*	Schools and academies in village of Ogdensburg, amending L. 1857, ch. 382.						
		All					1917	786	6
1898	312	*All*	Jurisdiction of city court of Albany						
		All					1910	603	389
		All					1914	368	389
1898	321	*All*	Office of sheriff of Oneida county a salaried office						
		1		1901	666	1			
		1		1907	39				
		1		1907	702				
		1		1913	298	1			

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1898	321	4		1901	666	2			
		4		1913	298	2			
1898	430	*All*	Common schools in city of						
		All	Utica, amending L. 1842, ch. 137.	..	...	....	1917	786	6
1898	431	*All*	Common schools in city of						
		All	Utica, amending L. 1850, ch. 66.	....	...	....	1917	786	6
1898	498	*All*	Common schools in city of						
		All	Utica, amending L. 1846, ch. 7.	....	...	....	1917	786	6
1898	588	*All*	Erecting Nassau county from						
		1a (added)	territory within limits of	1917	790				
		All	towns of Oyster Bay, North Hempstead and Hempstead, in Queens county.	1917	79[1]				
1899	40	*All*	Annual town and city election						
		All	of town and city of Dunkirk.	....	...	....	1917	786	6
1899	85		Minimum capital stock re-						
		All	quired for organization of fire and marine insurance.	....	...	....	1913	27	
1899	132	*All*	City of Newburgh, amending						
		All	L. 1865, ch. 541	....	...	....	1916	575	198
1899	151	*All*	Election of county treasurer of						
		All	Niagara county	....	...	....	1912	234	
1899	255[2]	*All*	Village of White Plains to ac-						
		All	quire lands for fire department purposes.	....	...	....	1909	191	
1899	275	All	Charter city of Gloversville.						
		2, 4	[Previous charter, L. 1890,	1914	281				
		10	ch. 55.]	1907	397				
		10		1910	377				
		10		1914	281				
		14		1914	281				
		14		1915	64				
		15		1914	281				
		25		1915	64				
		27, 29		1914	281				
		29a (added)		1914	281				
		30		1914	281				
		57, subds. 4, 23, 24, 29, 56		1914	281				
		70		1918	16				
		70a (added)		1917	57				
		74		....	...	....	1917	786	6
		89		1902	534	1			
		89		1914	281				
		89, subd. 1		1914	281				
		101a (added)		1917	57				
		105		1904	230				
		105		1917	57				
		131		1902	534				
		131		1904	229				
		131		1914	281				

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[1] County treasurer borrow money.

[2] Evidently intended to be repealed by L. 1915, ch. 356, § 307, although ch. 225 is given. L. 1899, ch. 255, repealed by L. 1909, ch. 191.

The italicised mat‘er following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
		146		1910	377				
1899	275	146		1914	281				
		170		1917	57				
		173		1914	281				
		173		1917	57				
		173a (added)		1917	57				
		185–191		....	...	....	1917	786	6
		192		1914	281				
		192		....	...	....	1917	786	6
		193		1907	549				
		193		1917	57				
		193–197		....	...	....	1917	786	6
		208		1908	383				
		208		1915	64				
		211		1917	57				
		212		1914	281				
		225		1914	281				
		226		1903	346				
		226		1914	281				
		226		1917	57				
		All		1914	430[1]				
		All		1917	821[2]				
1899	304	*All*	City of Oswego, amending L.						
		1–20	1895, ch. 394	....	...	....	1917	786	6
1899	339	*All*	City of Olean, amending L.						
		All	1893, ch. 478	....	...	....	1914	436	
		All		....	...	....	1915	535	136
1899	353	*All*	Macadamizing streets in village						
		All	of White Plains, Westchester county, and to provide the manner and means of paying therefor.	....	...	....	1915	356	307
1899	441	*All*	Creating commissioners of						
		1	jurors in counties	1903	201				
		1		1905	102				
		1		1905	510				
		1		1906	221				
		1		1911	705				
		2		1900	320				
		2, subd. 4		1903	201				
		2, subd. 4		1905	102				
		3		1900	320				
		4, subd. 3		1903	201				
		4, subd. 3		1905	102				
		4, subd. 3		1906	221				
		4, subd. 3		1911	705				
		4, subd. 3		1914	375				
		4, subd. 3		1918	526				
		6		1906	222				
		9		1913	438				
		11		1901	172				
		17		1900	320				

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[1] Bond issue to pay notes given for highway improvement.

[2] Bond issue for new grammar school legalized.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1899	517	*All*	Paving or macadamizing of						
		1	streets, avenues, highways	1915	8				
		2	and public places in village of	1915	8				
		3	Portchester, Westchester	1912	17				
		6	county	1911	231				
		6		1915	8				
		8–10, 13–16		1915	8				
		19		1906	234				
		19		1916	28				
		20		1915	8				
1899	547	*All*	Office of sheriff of Seneca county						
		10	a salaried office	1915	143				
1899	554	*All*	Police pension fund for city of						
		2	Albany, repealing L. 1885, ch.	1903	174				
		2, subd. 7	299; L. 1886, ch. 442; L. 1887,	1907	341				
		2	ch. 521	1917	561				
		4		1911	78				
		4		1917	561				
1899	586	*All*	City of Buffalo, expenses of						
		All	school department, amending	....	...	....	1917	786	6
			L. 1891, ch. 105.						
1899	590	*All*	City court of Albany, amend-						
		All	ing L. 1898, ch. 312	....	...	....	1910	603	389
		All		....	...	....	1914	368	389
1899	592	*All*	Commissioners of land office to						
		1a	exchange certain land with						
		(added)	Western New York and Penn-	1917	581				
			sylvania Railway Company.						
1899	627	*All*	City of Buffalo, amending L.						
		All	1891, ch. 105	....	...	....	1917	786	6
1900	152	*All*	Common schools in village of						
		All	Lockport, amending L. 1847,	....	...	....	1917	786	6
			ch. 51.						
1900	160	*All*	Charter city of Cortland. [Pre-						
		14	vious charter (village), L.	1904	400				
		14	1889, ch. 342.]	1906	50				
		14		1909	238				
		14		1918	207				
		53, subd. 8		1917	123				
		67 (added)		1912	385	1			
		74		1912	437				
		76		1905	262	3			
		76		1911	357	2			
		76		1915	459				
		87 (added)		1911	357	1			
		87		1916	149				
		89 (added)		1914	293				
		150		....	...	....	1917	786	6
		151		1901	196				
		151–157		....	...	....	1917	786	6
		158		1901	196				
		158, 159		....	...	....	1917	786	6
		160		1903	295				
		160–166		....	...	....	1917	786	6
		203 (added)		1914	314				

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Statutes				Amended or otherwise affected by			Expressly re by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1900	160	256		....	...	....	1916	148
		All		1915	15[1]			
		All		1915	208[2]			
		All		1917	121[3]			
1900	161	*All*	Office of county clerk of Greene county a salaried office					
		2, 3, 5		1918	393			
1900	170	*All*	Appropriation and management of certain lands along palisades of Hudson river for Interstate Park					
		2		1914	15			
		2		1915	562	1		
		5		1906	691			
		5		1910	361			
		5		1917	168	1		
		6, 7, 11		1910	361			
		6, 7, 11		1917	251			
		13		1917	251			
		17		1906	691			
		17		1917	251			
		All		1913	420[4]			
		All		1916	569[5]			
		All		1917	147[6]			
1900	259	*All*	City court of Troy.					
		1-24		....	...	....	1915	647
1900	324	*All*	Office of sheriff of St. Lawrence county a salaried office					
		8		1913	383			
		11[7]		1913	383			
1900	495	*All*	Supplying village of White Plains, Westchester county, with water, amending L. 1896, ch. 769.					
		All		....	...	....	1915	356
1900	497	*All*	Improving streets in village of White Plains, Westchester county, amending L. 1899, ch. 353.					
		All		....	...	....	1915	356
1900	525	*All*	Police pension fund for city of Elmira, repealing L. 1890, ch. 366					
		1, subd. 6 (added)		1910	468			
		1		1917	446			
		2		1912	529			
		3, subd. 4 (added)		1917	446			
		All		1915	517[8]			
1900	562	*All*	Common schools in city of Utica, amending L. 1850, ch. 66.					
		All		....	...	....	1917	786
1900	563	*All*	Common schools in city of Utica, amending L. 1846, ch. 7					
		All		....	...	....	1917	786

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[1] Sale of fire station building.
[2] Sale of school buildings and sites.
[3] Bond issue to pay various indebtedness.
[4] Control of Blauvelt rifle range in Palisades Interstate Park Commissioners.
[5] Extension of Palisades Interstate Park.
[6] Appropriation for extension of Palisades Interstate Park.
[7] Section 11 was left unamended by L. 1913, ch. 383.
[8] Pension to Hazel Gradwell.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1900	573	*All*	Schools and academies in village of Ogdensburg, amending L. 1857, ch. 382.						
		All		....	...	....	1917	786	6
1900	595	*All*	Exemptions of certain taxes and assessments in city of Albany, amending L. 1862, ch. 379.						
		All		....	...	....	1916	98	
1900	639	*All*	Office of supervisor of Monroe county a salaried office.						
		9a (added)		1916	92				
1900	659	*All*	City of Poughkeepsie, amending and repealing, in part, L. 1896, ch. 425.						
		8 (part amending §§ 161–163, 166, 167)		....	...	....	1917	786	6
1900	752	*All*	New York Connecting Railroad Company to construct bridge across East river						
		All		1905	691[1]				
		All		1910	605[2]				
		All		1910	606[1]				
		All		1915	101[2]				
		All		1915	102[1]				
1901	10	*All*	City of Olean, amending and in part repealing L. 1893, ch. 478						
		All		....	...	....	1914	436	
		All		....	...	....	1915	535	136
1901	45	*All*	Public park in village of Mechanicville, Saratoga county.						
		Title		1913	263	1[3]			
		4, 5		1913	263	2			
1901	56	*All*	Education in village of Hornellsville, amending L. 1873, ch. 386.						
		2, 3		....	...	....	1917	786	6
1901	110	*All*	School district number nine in town of Pomfret, amending L. 1858, ch. 34.						
		All		....	...	....	1917	786	6
1901	123	*All*	House of Shelter in city of Albany and commitment thereto.						
		1		1914	283				
1901	127	*All*	City of Buffalo, duties of school board, amending L. 1891, ch. 105.						
		All		....	...	....	1917	786	6
1901	196	*All*	City of Cortland, amending L. 1900, ch. 160; repealing L. 1880, ch. 109; L. 1881, ch. 142; L. 1892, ch. 97.						
		18, 19.		....	...	....	1917	786	6
1901	204	*All*	City of Poughkeepsie, division into wards, amending L. 1896, ch. 425.						
		16–19		....	...	....	1917	786	6
1901	284	*All*	City of Newburgh, city ordinance, amending L. 1865, ch. 541.						
		All		....	...	....	1916	575	198
1901	285	*All*	City of Mount Vernon, amending L. 1892, ch. 182						
		All		....	...	....	1917	786	6

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[1] Time for completion of bridge extended.

[2] Time for completion of road extended.

[3] Title amended to read "An Act to establish a public park in the village of Mechanicville, in county of Saratoga."

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Statutes				Amended or otherwise affected by			Expressly by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch
1901	294	*All*	City of Rensselaer, amending L. 1897, ch. 359.					
		All, except § 259		....	...	....	1913	48
1901	298	*All*	City of Cohoes, public instruction, amending and in part repealing L. 1892, ch. 671.					
		All		....	...	....	1917	78
1901	310	*All*	Improvement of streets in village of White Plains, Westchester county, amending L. 1900, ch. 497.					
		All		....	...	....	1915	35
1901	466	*All*	Charter Greater New York, amending and re-enacting L. 1897, ch. 378.					
		18		1906	638			
		18		1912	131	1		
		19		1907	763			
		19		1916	540			
		34		1907	431			
		34		1909	540			
		34		1910	553			
		34		1914	472	1		
		47		1904	409			
		47		1905	629			
		47		1907	168			
		47		1907	439			
		47		1908	376			
		47		1916	615			
		50		1905	629			
		50		1916	592			
		51		1910	262			
		51		1916	192	1		
		58		1904	413			
		58		1913	418			
		58		1915	607			
		58		1916	190			
		58		1917	610	1		
		74		1905	629	12		
		74		1905	630	1		
		74		....	...	....	1914	46
		74 (added)		1914	467	1		
		96, 100		1916	528			
		118a (added)		1916	502			
		119		1916	517			
		149		1904	247			
		149		1910	545			
		149		1912	398			
		149		1917	401	1		
		150		1903	258			
		150		1911	607			
		150		1914	8	1		
		151		1906	190			
		151, first sentence		1917	206			
		151, subd. 4		1916	94			
		151, subds. 7, 8 (added)		1916	529			
		152, 154		1916	191			
		162		1913	31			
		163		1907	365			

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	466	163		1912	396				
		165 (added)		1905	583				
		165		1911	669				
		165		1912	479				
		169		1902	563				
		169		1903	103	2			
		169		1905	639				
		169		1906	209	2			
		169		1907	439	3			
		169		1908	147				
		169		1909	377	1			
		169		1910	683	1			
		169		1911	456	1			
		169		1915	309				
		169		1916	615				
		176		1914	446				
		180		1903	624				
		180		1909	377				
		180		1918	515				
		181		1907	439				
		181		1912	492				
		182		1904	274				
		182		1907	762				
		182		1908	242				
		182		1910	683				
		182		1911	456				
		182		1915	308				
		188		1905	24				
		188		1910	683				
		188		1912	457				
		189 (added)		1911	224				
		189		1914	474				
		189		1915	309				
		189		1916	615				
		189		1918	504				
		195		1916	517				
		196		1904	343				
		196		1911	304				
		196		1917	617	1			
		205		1903	379				
		205		1906	659				
		205		1907	439				
		205		1909	398				
		205		1910	683				
		205		1911	694				
		205		1913	259				
		205b (added)		1912	400				
		206		1910	683				
		206		1915	309				
		215		1913	33				
		218a (added)		1916	494				
		221a (added)		1909	388				
		221a		1914	223				
		222 (added)		1903	103	1			
		222		1907	439	2			

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Statutes				Amended or otherwise affected by			Expressl	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	C
1901	466	222		1912	6	1		
		226		1915	378	1		
		226		1917	258	1		
		229		1910	683			
		229		1915	309	4		
		230, ¶ 3		1913	299			
		230, subd. 23a (added)		1918	505			
		231		1912	501			
		237		1913	36			
		237		1917	220			
		242a (added)		1914	470			
		242a		1916	497			
		242a		1917	601	1		
		242b (added)		1914	470			
		242b		1916	497			
		262b		1917	601	2		
		242c (added)		1917	692			
		243a (added)		1913	331	1		
		244a (added)		1914	466	1		
		245 (added)		1905	552			
		245		1906	360			
		245		1916	115			
		245		1917	221	1		
		247 (added)		1911	679			
		247		1916	512			
		247		1917	396			
		247		1918	15			
		248		1906	209	1		
		248		1915	601			
		248		1917	220	2		
		255		1917	602	1		
		256		1904	396			
		256		1905	525			
		256		1917	602	2		
		257, 258		1917	602	3, 4		
		258a (added)		1912	435			
		258a		....	...	....	1917	6
		259		1917	602	6		
		260		....	...	....	1917	6
		261		1906	550			
		261		1907	677			
		261		1912	452			
		270		1903	60			
		270		1907	469			
		270		1915	164			
		276		1901	730			
		276		1907	160			
		276		1912	449			
		276b (added)		1914	424			
		284		1903	612			
		284		1907	278			
		284		1912	480			
		284		1918	501			
		288		1907	160	2		
		288		1916	611	1		
		288		1917	395	1		

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	466	292		1917	257	1			
		297		1917	380	1			
		302		1915	310				
		305		1916	95				
		308a (added)		1917	64	1			
		315		1905	621				
		315		1914	455	1			
		321		....	...	....	1916	492	
		331		1917	400	1			
		346		....	...	....	1914	475	9
		348		....	...	....	1912	429	1
		353		1904	626	2			
		353, subd. 7		1914	460				
		353, subd. 7		1917	620	1			
		354		1904	512				
		354		1905	516				
		354		1907	445				
		354, subd. 5 (added)		1916	208	1			
		355a (added)		1918	651				
		391		1916	496				
		395		1906	597				
		395, subd. 3 (added)		1912	433				
		396		1917	698	1			
		406		1905	648				
		406		1916	503				
		406		1918	617				
		409		1916	503				
		410		....	...	....	1916	503	
		411		1916	503				
		411a (added)		1916	503				
		415, 416 (added)		1913	754				
		420		1912	528				
		420		1917	157				
		422		1912	527				
		422		1914	446				
		425		1907	763				
		425		1916	540				
		435		1911	712				
		435		1916	493				
		439		1903	406				
		439		1911	675	1			
		439		1913	329	1			
		439		1917	632				
		442		1903	409				
		442		1913	329	2			
		442		1917	632				
		469		1916	602				
		473		1902	509				
		473		1904	600				
		473		1908	382				
		473		1916	602				
		474		....	...	....	1916	602	
		475		1908	382				
		475		1916	602				
		476		1912	108	1			
		476		1916	602				

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Statutes				Amended or otherwise affected by			Expressly by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	C
1901	466	478		1916	602			
		542		1915	500			
		546		1917	615			
		594, 595, 599, 601		1916	528			
		602 (added)		1908	134			
		602		1916	528			
		603 (added)		1914	481			
		603		1916	528			
		604 (added)		1918	646			
		610		1904	628			
		610		1913	333			
		612b (added)		1910	681			
		612b, 613, 617		1913	34			
		629		1911	563			
		629		....	...	....	1915	5
		630		1911	563			
		630		1915	574	2		
		631		1911	563			
		631		1915	574	3		
		Ch. 12a. (§§ 640, 641) added		1914	475			
		641		1917	618			
		659		1910	330			
		659		1918	536			
		663		1912	446			
		676		1913	299			
		683		1904	362			
		683		1918	513			
		685		1912	420			
		685		1914	457			
		686		1912	419			
		686		1914	463			
		687		1908	357	1		
		687		1912	451			
		688		1908	357	2		
		688		1912	418			
		689		1912	401			
		689		1914	462			
		690		1904	532			
		690		1912	421			
		690		1917	619			
		695		1907	637			
		695		1909	381			
		695		1912	456			
		695		1916	492			
		696		1917	628			
		712a (added)		1916	526			
		Ch. 14a, §§ 718, 718a–718d (added)		1916	503			
		718d		1917	601			
		Ch. 14a, §§ 718e, 719, 719a, 719b (added)		1916	503			
		727		1911	899	1		
		727		1912	458			
		727		1913	698	1		
		734		1904	599			
		734		1907	277			
		734		1907	602			
		734		1912	462			

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	466	734		1918	500				
		740		1904	683				
		740		1907	547				
		740		1911	392				
		740		1912	328				
		757 (added)		1917	817				
		774 (added)		1911	899				
		774		1913	695				
		774		1914	459				
		774		1916	503				
		775 (added)		1911	899				
		775		1914	459				
		775, subds. 2, 3		1913	695				
		775, subds. 2, 3		1916	503				
		775, subd. 7 (added)		1916	503				
		775a (added)		1912	458				
		775a		....	...	....	1913	695	
		775a (added)		1914	459				
		775a (renumbered 775b)		1916	503				
		775a (added)		1916	503				
		776 (added)		1911	899				
		776		1912	458				
		776		1914	495				
		777 (added)		1911	899				
		777		1913	695				
		777		....	...	....	1916	503	
		777a (added)		1911	899				
		777a		1912	458				
		777a		....	...	....	1916	503	
		777b (added)		1911	899				
		777b		....	...	....	1916	503	
		778 (added)		1911	899				
		778		1916	503				
		778a (added)		1911	899				
		778a		1916	503				
		778c (added)		1911	899				
		778c		1914	495				
		779, 781		1917	604				
		Tit. 6, §§ 798–809		1915	594				
		Tit. 6, § 809a		1915	594				
		809a		1918	511				
		Tit. 6, § 809b		1915	594				
		810		1907	642				
		810		1915	594				
		810a		1915	594				
		811		1915	594				
		811a		1915	594				
		812		1915	594				
		812a		1915	594				
		813–815, 815a, 815b		1915	594				
		818		1904	741				
		818		1918	515				
		818a (added)		1911	694				
		818a		1918	537				
		819		1913	327				
		821		1901	724				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	466	821		1902	609				
		821		1912	434				
		821		1913	411				
		821a	(added)	1913	411				
		822		1903	624				
		822		1913	328				
		822		1915	597				
		827		1901	724				
		827		1914	448				
		849		1918	502				
		888a	(added)	1913	324				
		889a	(added)	1913	324				
		891		1916	491				
		891a	(added)	1913	324				
		891a	(renumbered 891b)	1916	491				
		891a	(added)	1916	491				
		891b	(renumbered from 891a)	1916	491				
		895		1911	455				
		895		1913	324				
		897		1902	192				
		897		1908	64				
		897		1913	324				
		897		1915	592	1			
		900		1911	455				
		900		1912	6				
		900		1914	451				
		902		1914	450				
		910		1913	680				
		914		1908	447				
		914		1911	455				
		914		1916	17				
		926		1915	600				
		937		1912	461				
		943		1916	516				
		944		1918	619				
		946		1916	501				
		946		1918	619				
		947		1916	501				
		947		1916	516				
		948		1910	546				
		948		1912	484				
		948		1915	591				
		949		1916	516				
		949a	(added)	1915	524				
		950		1918	619				
		951		1912	483				
		951		1915	537				
		951		1916	516				
		951		1918	619				
		953		1918	619				
		955		1910	550				
		955		1918	619				
		969	(added)	1915	606				
		970		1906	658				
		970		1909	394				
		970		1910	336				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	466	970		1913	329				
		Tit. 4, § 970		....	...	....	1915	606	
		Tit. 4, § 970 (added)		1915	606				
		970		1917	631				
		970a, 970b (added)		1915	593				
		970a, 970b (added)		1916	112				
		971		....	...	....	1915	606	
		971 (added)		1915	606				
		971a (added)		1915	523				
		972–989		....	...	....	1915	606	
		972–976 (added)		1915	606				
		976		1917	631				
		977–989 (added)		1915	606				
		990		1913	142				
		990–1011		....	...	....	1915	606	
		990–995 (added)		1915	606				
		995		1917	259				
		996–1016 (added)		1915	606				
		1017		1916	602				
		1019		1904	597				
		1019		1912	372				
		1019		1913	685				
		1019a (added)		1912	399	1			
		1019a		1913	684				
		1019a		1915	598				
		1022		1911	455				
		1022		1912	108				
		1022		1916	602				
		1023a		1913	683				
		1027		1908	490	13			
		1027		1913	326	1			
		1028 (renumbered from 1029)		1908	490				
		1028		1918	63				
		1030 (added)		1908	490				
		1030		1913	682				
		1032		....	...	....	1908	490	17
		1032 (added)		1908	490	18			
		1032		1917	63	1			
		1038		....	...	....	1908	490	17
		1038 (added)		1908	490	18			
		1038		1913	681				
		1043 (added)		1908	490	18			
		1043		1913	681				
		1043a (added)		1915	314	1			
		1044 (added)		1908	490				
		1044		1913	681				
		1056		....	...	....	1917	786	6
		1059		....	...	....	1917	786	6
		1060		1914	476				
		1060		....	...	....	1917	786	6
		1061–1063		....	...	....	1917	786	6
		1064		1903	43				
		1064		....	...	....	1917	786	6
		1066		1910	456				
		1066		1913	35				
		1066		1914	477				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	466	1066		1915	602				
		1067, 1068		1914	476				
		1067, 1068		....	...	....	1917	786	6
		1069		1904	542				
		1069, subd. 8 (added)		1914	479				
		1069 (except subd. 8)		....	...	....	1917	786	6
		1070–1077		....	...	....	1917	786	6
		1078		1913	45				
		1078, 1079		....	...	....	1917	786	6
		1079a (added)		1917	621				
		1080–1082		....	...	....	1917	786	6
		1083		1901	186	1			
		1083		....	...	....	1917	786	6
		1084		1913	749				
		1084		....	...	....	1917	786	6
		1085–1088		....	...	....	1917	786	6
		1089		1901	718				
		1089		1912	455				
		1089, 1090		....	...	....	1917	786	6
		1091		1911	902				
		1091		1912	459				
		1091		1913	534				
		1091		1913	838				
		1091		1914	264				
		1091		1917	627				
		1092		1902	530				
		1092		1903	177				
		1092		1905	661				
		1092		1907	167				
		1092		1914	476				
		1092		1917	303				
		1092a (added)		1905	107				
		1092a		....	...	....	1917	303	2
		1092b		1909	505				
		1092b		....	...	....	1917	303	2
		1092c (added)		1916	613				
		1092c		....	...	....	1917	303	2
		1093		1913	688				
		1093		....	...	....	1917	786	6
		1128		1914	119				
		1128		1915	512				
		1131		1918	583				
		1132		1915	161				
		1132		1916	580				
		1139		1914	115				
		1140		....	...	....	1915	516	
		1140 (added)		1915	516				
		1140		1916	193				
		1143		1918	512				
		1146 (added)		1918	584				
		1157		1913	321				
		1167		1917	404	1			
		1179, 1203		1915	284				
		1238		1903	510				
		1238		1905	532				
		1238		1915	284				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	466	1239		1905	532				
		1239		1916	515				
		1241		1911	886				
		1241		1914	461	1			
		1264		1913	687				
		1341		1916	503				
		1350, 1351		....	...	....	1915	279	184
		1352, subd. 4		1905	758				
		1352		1907	603				
		1352, subd. 6 (added)		1911	678				
		1352–1354		....	...	....	1915	279	184
		1355		1905	622				
		1355		1907	603				
		1355		....	...	....	1915	279	184
		1356		....	...	....	1915	279	184
		1357		1907	603				
		1357		....	...	....	1915	279	184
		1358, 1359		....	...	....	1915	279	184
		1360		1903	645				
		1360		1905	730				
		1360		1907	603				
		1360		....	...	....	1915	279	184
		1361		1905	758				
		1361		....	...	....	1915	279	184
		1362		1907	603				
		1362		1908	462				
		1362		....	...	....	1915	279	184
		1363		....	...	....	1915	279	184
		1373		1902	497				
		1373		1907	603				
		1373		1915	581				
		1374		....	...	....	1902	580	364
		1374		1906	192				
		1374		....	...	....	1915	279	184
		1378		....	...	....	1915	279	184
		1378 (re-enacted)		1915	581				
		1383		1907	603				
		1383		1915	581				
		1384		....	...	....	1902	580	364
		1384		1905	125				
		1384		....	...	....	1915	279	184
		1425, 1427		....	...	....	1915	279	184
		Ch. 21, §§ 1435–1448		....	...	....	1915	596	
		Ch. 21, §§ 1431–1453 (added)		1915	596				
		1441		1917	259				
		1458		....	...	....	1913	769	
		1458 (added)		1913	769				
		1459–1461		....	...	....	1913	769	2
		1473–1475		1914	475				
		1483		1914	475				
		1490 (added)		1910	547				
		1490		1914	475				
		1494 (added)		1910	547				
		1494		1914	475				
		1526		1901	715				
		1526		1904	457				
		1526		1913	686				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	466	1539a	(added)	1904	618				
		1539a		1910	702				
		1539a		1911	813				
		1539a		1912	463				
		1540		1916	513				
		1541a	(added)	1917	691				
		1543a	(added)	1907	723				
		1543a		1915	79				
		1543b	(added)	1913	302				
		1543b		1914	471				
		1543c	(added)	1916	616				
		1545a	(added)	1913	697				
		1553		1905	515				
		1553		1908	356				
		1553		1909	398				
		1553		1912	436				
		1556		1917	382				
		1560		1916	201				
		1567	(added)	1909	559				
		1567		1910	679				
		1567		1913	121	1			
		1567		1914	458				
		1568	(added)	1912	353				
		1569	(added)	1912	432				
		1569a	(added)	1913	694				
		1569b	(added)	1912	251				
			Ch. 23, tit. 4, §§ 1570, 1571	....	...	....	1915	284	2
			Ch. 23, tit. 4, §§ 1570, 1571, 1571a–1571d (added)	1915	284				
			Ch. 23, tit. 5, §§ 1572–1574 (added)	1913	755				
			Ch. 23, tit. 5, § 1572	1917	614				
			Ch. 24, §§ 1572–1576, 1576a (added)	1916	514				
			Ch. 24, §§ 1572–1576, 1576a (renumbered §§ 1575, 1575a–1575e)	1917	609				
			Ch. 24, §§ 1577–1595, 1608–1620 (renumbered ch. 25, §§ 1577–1595, 1608–1620)	1916	514				
		1585a	(added)	1915	284				
		All		1912	86[1]				
		All		1912	405[2]				
		All		1912	407[3]				
		All		1912	440[4]				
		All		1912	447[5]				
		All		1912	470[6]				
		All		1912	485[7]				
		All		1912	513[8]				

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[1] Property in Twelfth ward assigned to College of the City of New York.

[2] Land in borough of Bronx granted to city by state.

[3] Cancellation of assessments for opening Spencer place in Twenty-third ward, borough of Bronx.

[4] Determining amount of debt for public improvement subsequent to January 1, 1910.

[5] Claim of William J. Hart.

[6] Accept deeds of release of interests in Montague street, Brooklyn.

[7] Grant to railroad corporations rights of way in Westchester and Putnam counties.

[8] Claims of John P. Worstell and Joseph P. McNamara.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	466	All		1912	522[1]				
		All		1912	531[2]				
		All		1912	548[3]				
		All		1913	32[4]				
		All		1913	62[5]				
		All		1913	258[6]				
		All		1913	330[7]				
		All		1913	771[8]				
		All		1913	824[9]				
		All		1914	218[10]				
		All		1914	222[11]				
		All		1914	434[12]				
		All		1914	449[13]				
		All		1914	453[14]				
		All		1915	605[15]				
		All		1915	375[16]				
		All		1915	473[17]				
		All		1915	646[18]				
		All		1916	153[19]				
		All		1916	197[20]				
		All		1916	399[21]				
		All		1916	495[22]				
		All		1916	498[23]				
		All		1916	499[24]				
		All		1916	500[25]				
		All		1916	509[26]				
		All		1916	510[27]				

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[1] Marsh and meadow lands in Jamaica bay granted to city.
[2] Salaries of clerks in district attorney's office.
[3] County of Bronx erected.
[4] Additional lands for reformatory.
[5] Lands under water in Flushing creek granted to city.
[6] Connecting Fort Washington avenue with tunnel street to Riverside drive.
[7] Agreement confirmed for elimination of certain grade crossings.
[8] Expense of changing existing grade crossings.
[9] Grand and trial jurors in county of Bronx.
[10] Erection of court house.
[11] College of Commerce and Administration, and Museum of Commerce and Civics.
[12] Maps of Queens county.
[13] Laying out street through Maple Grove cemetery.
[14] Transfer of moneys to treasurer from chamberlain.
[15] Acquiring title to land for opening and extending Rosebank avenue, borough of Richmond.
[16] Claim of Elizabeth Bischoff.
[17] Payment of unpaid compensation of Thomas C. O'Sullivan.
[18] Retirement upon pension of persons in fire department.
[19] Nassau county to issue bonds to pay part of bonded indebtedness of Queens county.
[20] Payment of compensation of late John J. Delany.
[21] Chamberlain to cancel worthless mortgages.
[22] Laying out Remsen avenue in borough of Brooklyn.
[23] Allotment of lands for horticultural garden.
[24] Land at Hunt's Point in borough of Bronx conveyed to city.
[25] Adjustment of title affecting premises at Coney Island.
[26] Granting to city lands under water of Eastchester creek.
[27] Site for farm colony for women.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	466	All		1916	614[1]				
		All		1916	617[2]				
		All		1916	618[3]				
		All		1916	619[4]				
		All		1916	620[5]				
		All		1916	621[6]				
		All		1917	383[7]				
		All		1917	406[8]				
		All		1917	407[9]				
		All		1917	605[10]				
		All		1917	608[11]				
		All		1917	613[12]				
		All		1917	616[13]				
		All		1917	622[14]				
		All		1917	630[15]				
		All		1917	633[16]				
		All		1917	642[17]				
		All		1917	651[18]				
		All		1917	664[19]				
		All		1917	718[20]				
		All		1917	720[21]				
		All		1917	732[22]				
		All		1918	90[23]				
		All		1918	405[24]				
		All		1918	506[25]				
		All		1918	509[26]				
		All		1918	510[27]				

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[1] Audit claim of the John H. Parker Company.

[2] Rehear charges against John C. McGee.

[3] Rehear charges against John H. Downs.

[4] Rehear charges against Hugh McIver.

[5] Rehear charges against John P. Kilcommons.

[6] Rehear charges against James Quigley.

[7] Remsen avenue improved.

[8] Saw Mill river and Harlem valleys sewer.

[9] Bedford, Westchester county, sewer.

[10] Lands in Flushing bay granted to city.

[11] Awards for damage for change of grade, Sixty-seventh street, Brooklyn.

[12] Convey certain real estate to Hempstead union free school district.

[13] Taxes and assessments on Convent of Jesus-Mary cancelled.

[14] Extending Sutter avenue through lands of Acacia cemetery.

[15] Legal expenses of sheriff of county of Bronx.

[16] Compensation of Samuel T. Maddox, late justice of Supreme Court, paid to widow.

[17] Conveyance of rights and easements in Barge Canal terminal lands for subway purposes.

[18] Citizens perform police duty.

[19] Annexation of part of Yonkers.

[20] Adjacent land to Coney Island granted for recreation piers.

[21] Commission to investigate surface railroad conditions on West side.

[22] Police commissioner to restore Mathew J. McGrath to sergeant.

[23] Commissioner of records, Bronx county.

[24] Parole and rearrest of females escaping from institutions.

[25] Lands under water released by state.

[26] Lands under water of Eastchester creek conveyed.

[27] Powers of grade crossing commission transferred to board of estimate.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	466	All		1918	514[1]				
		All		1918	538[2]				
		All		1918	548[3]				
		All		1918	580[4]				
		All		1918	581[5]				
		All		1918	586[6]				
		All		1918	588[7]				
		All		1918	652[8]				
		All		1918	653[9]				
		All		1918	654[10]				
		All		1918	658[11]				
1901	473	*All*	City of Mount Vernon, powers of board of education, amending L. 1892, ch. 182.						
		All		....	...	....	1917	786	6
1901	504	*All*	Commissioners of Palisades Interstate Park, supplementing L. 1900, ch. 170.						
		All		1913	420[12]				
1901	602	*All*	Commissioner of jurors and special jury in counties having a population of one million or more.						
		4		1918	587				
1901	623	*All*	Municipal electric light plant of village of Green Island, Albany county, supplementing L. 1897, ch. 158; L. 1895, ch. 593.						
		1		1917	346				
1901	655	*All*	Collection of taxes in Cayuga county, amending L. 1882, ch. 133.						
		All		....	...	....	1914	322	1[13]
1901	672	*All*	City of Olean, amending L. 1893, ch. 478.						
		All		....	...	....	1914	436	
		All		....	...	....	1915	535	136
1901	674	*All*	City court of Troy, amending L. 1900, ch. 259.						
		All		....	...	....	1915	647	389
1901	705	*All*	Office of sheriff of Kings county a salaried office.						
		2		1903	464				
		2		1918	647				
1901	706	*All*	Office of register of Kings county a salaried office.						
		2		1904	699				
		2		1906	496				

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[1] Land at Hunt's Point conveyed.
[2] Public streets across Jamaica bay.
[3] Balance of compensation of late William J. Carr, justice, paid to daughters and sons.
[4] Assessment of canal terminal lands for street improvement.
[5] Assessment of Barge Canal terminal lands for street improvement.
[6] Contracts for completion of rapid transit lines.
[7] Ship canal between Gravesend bay and Sheepshead bay.
[8] Increasing salaries of employees in district attorney's office.
[9] Burials near water supply for borough of Brooklyn prevented.
[10] Rehear charges against Geo. B. Hawthorne of police department.
[11] Issuance of corporate stock and serial bonds during war.
[12] Commission has control of Blauvelt rifle range.
[13] Conveyances made pursuant to L. 1882, ch. 133, as amended, legalized.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1901	706	2		1913	776				
		2		1918	644				
		4, 7, 8		1918	644				
1901	718	*All*	Greater New York charter, licenses of teachers, amending L. 1901, ch. 466.						
		All					1917	786	6
1902	22	*All*	Office of treasurer of Broome county a salaried office						
		1		1904	440				
		1		1908	498				
		1		1916	181				
		3		1904	440				
		3		1916	181				
1902	29	*All*	Office of sheriff of Franklin county a salaried office						
		8		1907	12				
		8		1908	317				
		8, subd. (c)		1918	156				
		8, subd. (g)					1918	156	2
1902	63	*All*	Charter city of Fulton. [Previous charter (village), L. 1898, ch. 269.]						
		11		1911	551				
		11		1918	482				
		12		1904	60				
		12		1911	597				
		12		1915	610				
		33, 44		1918	482				
		48		1911	551				
		48		1915	610				
		50, subd. 17		1915	610				
		120		1915	610				
		139–147 (added)		1916	455				
		148, 149, 149a–149g (added)		1916	456				
		150–167					1917	786	6
		280		1915	610				
		283		1910	104				
		283		1918	482				
		All		1912	471[1]				
		All		1916	457[2]				
1902	92	*All*	City of Rensselaer, amending L. 1897, ch. 359						
		All					1913	481	435
1902	115	*All*	Supply village of White Plains, Westchester county, with water, amending L. 1896, ch. 769.						
		All					1915	356	307
1902	131	*All*	Office of sheriff of Suffolk county a salaried office						
		1–3, 5, 7		1916	583				
		8					1916	583	
		9		1910	687				
		9		1916	583				
		9		1917	338				
		10					1916	583	
		11		1916	583				
		12					1916	583	

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[1] Borrow money to pay teachers' salaries.

[2] Bond issue to pay indebtedness.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1902	201	*All*	Village of White Plains, Westchester county, amending and repealing in part L. 1867, ch. 518.						
		All		....	...	....	1915	356	307
1902	223	*All*	City of Lockport to borrow money for school house						
		All		....	...	....	1917	786	6
1902	264	*All*	Village of Canandaigua, amending L. 1893, ch. 666						
		All		....	...	....	1913	371	251
1902	261	*All*	Albany county to provide for temporary detention of juvenile delinquents with Mohawk and Hudson River Humane Society, supplementing L. 1894, ch. 292.						
		1		1904	227				
		1		1908	241				
		1		1913	294				
		1		1914	236				
1902	239	*All*	Charter city of Plattsburg. [Previous charter (village), L. 1890, ch. 322.]						
		7		1912	428				
		10		1912	428				
		10		1917	641				
		11		1903	449				
		11		1904	319				
		11		1905	484				
		11		1912	428				
		11		1915	583				
		11		1917	641				
		24		1912	428				
		26		1903	449				
		26		1912	428				
		26		1917	641				
		31		1912	428				
		36		1914	341				
		39, subd. 1		1903	449				
		39, subd. 1		1917	641				
		39, subds. 2, 4		1917	641				
		39, subd. 6		1903	449				
		39, subd. 6		1915	583				
		39, subd. 6		1917	641				
		39, subd. 8		1903	449				
		39, subd. 8		1912	428				
		39, subd. 8		1914	341				
		39, subd. 8		1917	641				
		45 (part preceding subd. 1)		1917	641				
		45, subd. 18		1912	428				
		45, subd. 25		1905	362				
		45, subd. 25		1914	341				
		45, subd. 26 (added)		1910	496				
		45, subds. 27–30 (added)		1912	428				
		50, 52		1917	641				
		53, subd. 1		1910	495				
		53, subd. 2		1917	641				
		53, subd. 4 (added)		1914	341				
		54, subd. 1		1917	641				
		60		1912	428				
		60		1914	341				
		60a (added)		1912	428				
		60a		1917	641				
		72		1903	449				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1902	269	72		1904	319				
		72		1912	428				
		72		1915	583				
		73		1903	449				
		73		1912	428				
		73		1915	583				
		80		1903	449				
		80		1917	641				
		98		....	...	....	1917	786	6
		99–101		1903	449				
		99–105		....	...	....	1917	786	6
		103–109		1904	319				
		106–112		....	...	....	1917	786	6
		113		1904	319				
		113		....	...	....	1917	786	6
		114		1917	641				
		115		1912	428				
		139		1917	641				
		147		1912	428				
		148		1903	449				
		148		1912	428				
		152		1904	319				
		152		1915	583				
		157		1903	449				
		157		1912	428				
		158		1912	428				
		165		1903	449				
		165		1912	428				
		165		1917	641				
		174		1905	362				
		174		1915	583				
		178		1917	641				
		Tit. 16 (§§ 185–190) added		1916	60				
		All		1915	316[1]				
1902	274	*All*	Special terms of Supreme Court in cities of Jamestown and Olean						
		All		1908	37				
		1		1913	449				
		1		1916	75				
1902	284	*All*	School district number nine in town of Pomfret, amending L. 1858, ch. 34.						
		All		....	...	....	1917	786	6
1902	309	*All*	Purchasing agent for Monroe county, repealing in part L. 1900, ch. 639						
		2		1907	139				
		2		1918	230				
1902	330	*All*	Christ Church in city of Hudson to set apart certain funds as permanent endowment fund.						
		1		1916	354	1			
1902	342	*All*	Office of supervisor in Westchester county a salaried office						
		2		1910	91				
		2		1917	311				
		All		1913	42[2]				

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[1] Legalizing water bonds.
[2] Temporary loan bonds.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1902	394	*All*	Incorporating Diocesan Missions of Long Island						
		6		1904	33				
		6		1917	85	1			
1902	446	*All*	City of Rensselaer, collection of certain assessments, amending L. 1897, ch. 359.						
		All		....	...	....	1913	481	435
1902	490	*All*	Office of sheriff of Monroe county a salaried office						
		1, 4		1916	67				
		5		1903	100				
		5		1916	67				
		6		1916	67				
		7, 8		1903	100				
		7, 8		1906	500				
		7, 8		1907	35				
		7, 8		1916	67				
		9		1916	67				
		10		1903	100				
		10		1916	67				
		11		1903	100				
		11		1906	500				
		11		1916	67				
1902	494	*All*	City of Kingston, system of schools, amending L. 1896, ch. 747.						
		1		....	...	....	1917	786	6
1902	526	*All*	Buffalo Fine Arts Academy, repealing L. 1873, ch. 308; L. 1882, ch. 75.						
		2		1918	382				
1902	559	*All*	Enforcement and collection of taxes in Oneida county						
		6		1918	474				
1902	584	*All*	Jurors and commissioner of jurors in Kings county						
		1-3		1911	628				
		1-3		1915	724	1			
1902	572	*All*	Charter city of Middletown. [Previous charter, L. 1888, ch. 535.]						
		3		1907	653				
		3		1911	699				
		3		1916	200				
		11		1911	699				
		11		1916	200				
		14		1911	699				
		14		1916	200				
		20		1904	560				
		20		1911	699				
		20		1916	200				
		22		1911	699				
		22		1916	200				
		53		1911	699				
		53		1916	200				
		54, subd. 2		1916	200				
		61		1911	699				
		61		1916	200				
		63		1911	187				
		63		1916	200				
		65		1911	699				
		65		1916	200				
		68		1911	699				

The italicised matter following each chapter number indicates the part of such chapter treated as special private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1902	572	68		1916	200				
		68a (added)		1911	699				
		68a		1916	200				
		70b (added)		1911	699				
		70b		1916	200				
		72		1907	653				
		72		1910	50				
		72		1911	699				
		72		1916	200				
		78		....	...	....	1916	200	
		106		1916	200				
		107, subd. 2		1911	699				
		107		1910	302				
		107, subd. 8 (added)		1912	415				
		108		1916	200				
		112a (added)		1912	415				
		119		1910	302				
		119		1911	699				
		119, subd. 1		1912	415				
		120		1916	200				
		136		1904	560				
		136		1916	200				
		147		1916	200				
		153		....	...	....	1916	200	
		156		1911	699	35			
		156		1916	200				
		160		....	...	....	1917	786	
		161		1911	699				
		161, 162		....	...	....	1917	786	
		163		1911	699				
		163, 164		....	...	....	1917	786	
		165		1911	699				
		165		....	...	....	1917	786	
		166, subd. 8		1911	699				
		166, subd. 12		1911	187				
		166–169		....	...	....	1917	786	
		170, subd. 5		1907	653				
		170, 171		....	...	....	1917	786	
		172		1911	187				
		172–174		....	...	....	1917	786	
		204, 205		1916	200				
		205a–205c (added)		1916	200				
		209		1916	200				
		212		....	...	....	1916	200	
		All		1912	422[1]				
		All		1918	485[2]				
1902	580	*All*	Municipal court in New York city. [Subsequent Municipal Court Act, L. 1915, ch. 279.]						
		231b (added)		1913	690				
		310		1907	664				
		310		1910	538				
		310		1913	386				

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[1] Cost of paving Cottage street.

[2] Trunk sewer.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1902	580	340		1912	468				
		351a (added)		1913	692				
		All		....	...	....	1915	279	
1903	43	*All* All	Greater New York charter, general school fund, amending L. 1901, ch. 466.	....	...	....	1917	786	6
1903	46	*All* All	City of Mount Vernon, public libraries, amending L. 1892, ch. 182.	....	...	....	1917	786	6
1903	56	*All* All	City of Rensselaer, amending L. 1897, ch. 359	....	...	....	1913	481	435
1903	65	*All* All	City of Newburgh, salary of recorder, amending L. 1865, ch. 541.	....	...	....	1916	575	198
1903	66	*All* All	City of Newburgh, amending L. 1865, ch. 541	....	...	....	1916	575	198
1903	67	*All* All	City of Newburgh, amending L. 1865, ch. 541	....	...	....	1916	575	198
1903	71	*All* All	Common schools in city of Utica, amending L. 1842, ch. 137.	....	...	....	1917	786	6
1903	144	*All* All	Municipal court of New York city, amending and in part repealing L. 1902, ch. 580.	....	...	....	1915	279	184
1903	147	*All*	Provision for issuing bonds to amount of not to exceed one hundred and one million dollars for improvement of Erie, Oswego and Champlain canals and submission of the same to the people						
		3		1905	740				
		3		1907	710				
		3		1908	508				
		3		1910	83				
		3		1913	801				
		4		1906	365				
		4		1908	196				
		4		1909	273				
		4		1911	468				
		4		1911	736				
		4		1913	801				
		5		1909	244				
		5		1915	511				
		9		1914	416				
		17		1909	320				
		17		1915	149				
		All		1912	9[1]				
		All		1912	47[2]				
		All		1912	82[3]				
		All		1912	110[4]				
		All		1912	116[5]				
		All		1912	209[6]				
		All		1913	243[7]				

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[1] Commission on Barge Canal operation.

[2] Appropriation for mechanical and other structures.

[3] Appropriation for improvement.

[4] Appropriation for canal debt interest.

[5] Appropriation for interest.

[6] Annual contribution for canal debt sinking fund.

[7] Retention of portions of present Champlain and Erie canals.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1903	147	All		1913	290[1]				
		All		1913	358[2]				
		All		1913	515[3]				
		All		1913	706[4]				
		All		1913	708[5]				
		All		1913	787[6]				
		All		1913	804[7]				
		All		1913	805[8]				
		All		1914	248[12]				
		All		1914	263[9]				
		All		1914	412[10]				
		All		1914	525[11]				
		All		1915	283[12]				
		All		1915	570[13]				
		All		1915	640[14]				
		All		1915	656[15]				
		All		1915	659[16]				
		All		1915	661[17]				
		All		1915	693[18]				
		All		1915	695[19]				
		All		1915	696[19]				
		All		1915	706[19]				
		All		1915	729[20]				
		All		1916	8[21]				
		All		1916	255[22]				
		All		1916	603[23]				
		All		1916	628[24]				
		All		1916	642[25]				
		All		1917	237[26]				

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[1] Mapping canal lands.
[2] Reappropriating unexpended balance for terminals and facilities.
[3] Appropriation to repair damage done by floods to Barge Canal system.
[4] Appropriation.
[5] Compensation for property appropriated.
[6] Rate of interest.
[7] Direct tax for canal sinking fund.
[8] Appropriation to pay interest.
[9] Improvement of canal basin in city of Albany.
[10] Portion of present Champlain canal retained for navigation and terminal purposes.
[11] Annual contribution to canal sinking funds.
[12] Towing facilities. .
[13] Bond issue for improvement of Erie, Oswego and Champlain canals.
[14] Time for filing claims extended.
[15] Settlement of claim against United Surety Company.
[16] Settlement of claim against People's Surety Company.
[17] Settlement of claim against Bankers' Surety Company.
[18] Reappropriation.
[19] Appropriation.
[20] Annual contribution to canal debt sinking fund.
[21] Appropriation for improvement.
[22] Towing facilities.
[23] Commission to investigate construction of bridge over Mohawk river and Barge Canal.
[24] Appropriation for improvement.
[25] Appropriation to pay interest on Erie, Champlain and Oswego canal bonds.
[26] Towing facilities provided.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1903	147	All		1917	376[1]				
		All		1917	519[2]				
		All		1917	743[3]				
		All		1918	152[4]				
		All		1918	184[5]				
		All		1918	353[6]				
		All		1918	368[7]				
		All		1918	606[8]				
		All		1918	612[9]				
1903	156	*All*	Municipal court of New York city, amending L. 1902, ch. 580.						
		All		....	...	....	1915	279	184
1903	187	*All*	Submission to electors of city of Ogdensburg, question of furnishing free text books.						
		All		....	...	....	1917	786	6
1903	200	*All*	Office of county clerk of Livingston county a salaried office.						
		3		1916	241				
1903	240	*All*	City of Buffalo to acquire lands for system of water works.						
		All					1912	381	8
1903	249	*All*	City of Oswego, amending L. 1895, ch. 394.						
		2		....	...	....	1917	786	6
1903	282	*All*	Municipal court of New York city, amending L. 1902, ch. 580.						
		All		....	...	....	1915	279	184
1903	285	*All*	Police department in village of Port Chester, Westchester county						
		1		1912	295				
		1		1915	5				
		2		1912	295				
		16 (added)		1912	295				
		16, subd. 8 (added)		1914	24				
		17–19 (added)		1912	295				
1903	295	*All*	City of Cortland, amending L. 1900, ch. 160.						
		5		....	...	....	1917	786	6
1903	315	*All*	Nassau county to maintain law library						
		2		1915	365				
		3–5 (added)		1915	365				
1903	319	*All*	Office of sheriff of Herkimer county a salaried office						
		1		1904	681				
		1		1915	409				
		3		1904	681				
		3		1907	376				
		3		1915	409				
		3		1917	271				
		4		1915	409				
		4		1917	271				
		5–7		1915	409				

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[1] Survey for extension Auburn to Port Byron.

[2] Motor vehicle equipment on canals.

[3] Route Tonawanda to Buffalo.

[4] Money reappropriated.

[5] Appropriation.

[6] Appropriation for payment of interest.

[7] Annual contribution.

[8] Time for filing existing claims.

[9] Court of Claims to determine damages.

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1903	336	*All*	Court house in New York county, repealing L. 1900, ch. 649.					
		7		1913	315			
		10a (added)		1915	722			
		13a (added)		1916	511			
		15c (added)		1912	250			
1903	399	*All*	City of Watertown, amending L. 1897. ch. 760.					
		6, 8					1917	786
1903	416	*All*	City of Lockport to borrow money					
		All					1917	786
1903	428	*All*	System of sewerage and drainage in village of White Plains, Westchester county, amending L. 1887, ch. 609.					
		All					1915	356
1903	430	*All*	Paving streets and portions thereof in city of Auburn					
		3		1905	352			
		3		1914	287			
		5		1905	352			
		5		1910	380			
		5		1914	287			
		All		1914	421[1]			
1903	431	*All*	Municipal court of New York city, amending L. 1902, ch. 580.					
		All					1915	279
1903	449	*All*	City of Plattsburg, amending L. 1902, ch. 269.					
		3, parts amending	§§ 99–101				1917	786
1903	451	*All*	Improving streets in village of White Plains, Westchester county, amending L. 1899, ch. 353.					
		All					1915	356
1903	452[3]	*All*	Paving streets in village of White Plains, Westchester county, amending L. 1895, ch. 747.					
1903	485	*All*	Incorporating Firemen's Benevolent Fund Association of city of New Rochelle.					
		2		1914	211			
1903	507	*All*	Abolishing certain grade crossings in borough of Brooklyn, city of New York.					
		15–19 (added)		1918	510			
1903	552	*All*	Grade crossings in city of Buffalo, amending L. 1888, ch. 345.					
		All					1915	356
1903	555	*All*	City of Lockport to borrow money					
		All					1917	786
1903	562	*All*	City of Kingston, amending L. 1896, ch. 747.					
		All					1917	786
1903	616	*All*	Village of White Plains, Westchester county, amending L. 1867, ch. 518.					
		All					1915	356

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[1] Legalizing proceedings in paving South Division street and issuing bonds.

[2] Evidently intended to be repealed, although L. 1915, ch. 356, § 307, gives as L. 1903, ch. 552.

[3] Repeal of L. 1903, ch. 452, street paving in village of White Plains, evidently inten

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1903	637	*All*.....	Time within which International Railway Company and Crosstown Street Railway Company of Buffalo shall complete railroads in city of Buffalo.						
		1.......		1907	138				
		1.......		1911	789				
		1.......		1914	392				
1904	7	*All*.....	Charter village of Norwich, Chenango county. [Previous charter, L. 1895, ch. 374; subsequent charter, L. 1914, ch. 34.]						
		Tit. 6, § 9		1913	93				
		All.....		....	...	....	1914	34	367
1904	42	*All*.....	Village of Canandaigua, amending L. 1893, ch. 666.........						
		All.....		....	...	....	1913	371	251
1904	93	*All*.....	Municipal court of New York city, amending L. 1902, ch. 580.						
		All.....		....	...	....	1915	279	184
1904	102	*All*.....	Incorporating the Silver Bay Association for Christian Conferences and Training.						
		2, 4.....		1917	438	1			
1904	127	*All*.....	Recording and indexing instruments affecting land in New York city, according to city blocks, amending L. 1889, ch. 349.						
		All.....		....	...	....	1916	514	3
1904	152	*All*.....	Board of equalization in Greene county....................						
		All.....		....	...	....	1918	71	
1904	189	*All*.....	Public schools of city of Elmira, amending L. 1895, ch. 370...						
		All.....		....	...	....	1917	786	6
1904	264	*All*.....	Municipal court of New York city, amending L. 1902, ch. 580.						
		All.....		....	...	....	1915	279	184
1904	242	*All*.....	Common schools in city of Utica, amending L. 1850, ch. 66.						
		All.....		....	...	....	1917	786	6
1904	276	*All*.....	Village of White Plains, Westchester county, to borrow money for municipal building.						
		All.....		....	...	....	1915	356	307
1904	278	*All*.....	Village of White Plains, Westchester county, amending L. 1867, ch. 518.						
		All.....		....	...	....	1915	356	307
1904	300	*All*.....	Charter city of Niagara Falls. [Previous charter, L. 1892, ch. 143; subsequent charter, L. 1916, ch 530.].............						
		15, subd. 3		1906	392				
		15, subd 3		1907	749				
		15......		1911	645				
		15, subd. 3	....	1912	324				
		16, first paragraph and subds. 1–4	....	1912	324				
		16, subd 5	....	1907	749				
		16, subd. 5	....	....	...	....	1912	324	3
		16, subd. 6	....	1911	645				
		16, subd. 6 renumbered subd. 5	....	1912	324				
		16, subd. 7 renumbered subd. 6	....	1912	324				
		16, subds. 8, 9 renumbered subds. 7, 8	...	1912	324				
		16, subds. 10–15 renumbered subds. 9–14	.	1912	324				
		16, subd. 15 (added)	....	1912	324				
		163.....	....	1907	749				

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1904	300	163		1912	324				
		211		1906	335				
		211		1912	324				
		Art. 7, title		1912	324				
		Art. 7, sub-title, §§ 330–334 (added)		1912	324				
		340–353		....	...	....	1917	786	6
		362, 363		1912	324				
		563 (added)		1915	519				
		All		....	...	....	1916	530	
		All		1912	299[1]				
1904	306	*All*	Police department for village of White Plains, Westchester county.						
		All		....	...	....	1915	356	307
1904	319	*All*	City of Plattsburg, amending L. 1902, ch. 269.						
		6 (parts amending) §§ 106–109, 113)		....	...	....	1917	786	6
1904	327	*All*	City of Olean, amending L. 1893, ch. 478.						
		All		....	...	....	1914	436	
		All		....	...	....	1915	535	136
1904	345	*All*	Town board of town of Ossining, Westchester county, to appropriate certain moneys to Ossining Hospital Association.						
		All		....	...	....	1914	439	
1904	404	*All*	City of Newburgh, sale of lands purchased at tax sales, amending L. 1865, ch. 541.						
		All		....	...	....	1916	575	198
1904	466	*All*	Street improvements in city of Albany, repealing generally						
		2		1916	43				
		5		1912	196				
		5		1914	284				
		5		1915	59				
1904	469	*All*	Village of Canandaigua, amending and in part repealing L. 1893, ch. 666.						
		All		....	...	....	1913	371	251
1904	476	*All*	Supplying village of White Plains with water, amending L. 1896, ch. 769.						
		All		....	...	....	1915	356	307
1904	542	*All*	Greater New York charter, amending L. 1901, ch. 466.						
		All		....	...	....	1917	786	6
1904	571	*All*	City of Newburgh, amending L. 1865, ch. 541.						
		All		....	...	....	1916	575	198
1904	598	*All*	Municipal court act of New York city, amending and in part repealing L. 1902, ch. 580.						
		All		....	...	....	1915	279	184
1904	625	*All*	Municipal court of New York city, amending L. 1902, ch. 580.						
		All		....	...	....	1915	279	184
1904	650	*All*	Charter city of Rome. [Previous charter (village), L. 1870, ch. 25.]						
		5a (added)		1918	542				
		6		1911	703				
		6		1918	542				
		8		1917	424				

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[1] Tax election for public market legalized.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1904	650	13		1918	542				
		21		1909	576				
		21		1918	542	4			
		42		1909	575				
		42		1912	442				
		46		1905	468				
		46		1918	542				
		47		1905	468				
		47		1918	542				
		48, 49		1911	703				
		48, 49		1917	424				
		51		1915	571				
		53		1909	575				
		53		1918	542				
		54		1905	468				
		54		1918	542				
		57		1915	573				
		57		1918	542				
		80, subd. 1		....	...	....	1918	542	10
		92		1909	575				
		92		1911	131				
		92		1912	327				
		93a (added)		1917	424				
		114		1917	424				
		141, subd. 2		1917	424				
		147		1905	468				
		147		1906	651				
		147		1911	131				
		147		1918	488				
		149		1906	651				
		149		1917	424				
		175		1905	468				
		175		1912	443				
		175		1917	424				
		178		1907	327				
		178		1908	245				
		178, subd. 1		1915	573				
		178, subd. 2		1916	161				
		180		1915	573				
		180		1916	161				
		180		1918	542				
		199–205		....	...	....	1917	786	6
		206		1905	468				
		206–208		....	...	....	1917	786	6
		212		1915	573				
		212		1918	542	12			
		All		1917	185[1]				
1904	655	*All*	State College of Agriculture at						
		All	Cornell University	1913	751[2]				
1904	664	*All*	Board of statutory consolida-						
		All	tion providing for consolida-	1912	393[3]				
		All	tion of statutes	1913	713[3]				

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[1] Firemen's pension fund.

[2] New buildings.

[3] Report and preparation of Civil Practice Act.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1904	682	*All*	Municipal court of New York city, amending L. 1902, ch. 580.						
		All		....	...	....	1915	279	184
1904	735	*All*	Municipal court of New York city, amending L. 1902, ch. 580.						
		All		....	...	....	1915	279	184
1904	716	*All*	Protection of property adjacent to Delaware river in village of Port Jervis.						
		All		1912	537[1]				
1904	718	*All*	Site for New York State Training School for Boys, and establishing school						
		7		1905	133				
		7		1906	617				
		7		1907	386				
		7		1913	762				
		7		1913	799				
1904	760	*All*	New York city to acquire site and lease same to state for reception hospital for insane.						
		All		1913	678[2]				
1905	6	*All*	Village of Canandaigua, amending L. 1893, ch. 466						
		All		....	...	....	1913	371	251
1905	17	*All*	Board of supervisors of Westchester county to authorize towns to borrow money by the issue of bonds for highway improvement.						
		2		1918	383				
		3 (added)		1918	383				
1905	73	*All*	Municipal court of city of New York, amending L. 1902, ch. 580.						
		All		....	...	....	1915	279	184
1905	87	*All*	City of Mount Vernon to borrow money for buildings for fire and police departments						
		1		1910	390				
		1		1912	132				
		1		1913	98				
1905	109	*All*	City of Buffalo, department of public instruction, amending L. 1891, ch. 105.						
		All		....	...	....	1917	786	6
1905	137	*All*	Publication by county clerk of Westchester county of certain official notices, repealing L. 1904, ch. 207.						
		All		....	...	....	1912	94	
1905	138	*All*	Publication by board of supervisors of Westchester county of certain official notices, repealing L. 1904, ch. 206.						
		All		....	...	....	1912	93	
1905	142	*All*	Charter city of Corning. [Previous charter, L. 1890, ch. 58.]						
		39		1906	194				
		39		1917	336				
		48		1914	140				
		48		1917	336				
		49		....	...	....	1917	336	3
		77		1917	336				
		110a (added)		1912	425				
		All		1916	391[3]				
		All		1917	195[4]				

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[1] Appropriation for completion of work.

[2] Lease surrendered to New York city.

[3] Borrow money to pay current indebtedness.

[4] Bond issue to control Monkey Run creek.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1905	147	*All*	Village of White Plains to issue bonds.						
		All					1915	356	307
1905	148	*All*	Village of White Plains to acquire lands for public library.						
		3		1906	43				
		3		1911	306				
		3		1913	14				
		All					1915	356	307
1905	159	*All*	Incorporating trustees of Eastern Star Hall and Home of the State of New York, in part repealing L. 1895, ch. 620.						
		All		1916	56[1]				
1905	173	*All*	Abolishment and removal of Kings county penitentiary.						
		4, 7		1914	493				
1905	226	*All*	City of Olean, amending L. 1893, ch. 478.						
		All					1914	436	
		All					1915	535	136
1905	228	*All*	Municipal court of New York city, amending L. 1902, ch. 580.						
		All					1915	279	184
1905	250	*All*	Releasing interest of state in certain real estate in New York city to Raoul Dupuy and others.						
		All, §§ 1–3		1914	36[2]				
1905	233	*All*	Town of Cortlandt to appropriate certain moneys to Helping Hand Hospital Association of Peekskill.						
		1		1911	672				
		1		1912	142				
1905	235	*All*	Office of sheriff of Rockland county a salaried office.						
		[3]2		1913	396				
		4		1913	396				
		8		1913	396				
		9		1913	396				
1905	292	*All*	Appropriation for maintenance of American Museum of Natural History in Central Park of New York city.						
		1		1915	312				
1905	302	*All*	New York State Convention of Universalists to sell property on Hoffman street in borough of Bronx.						
		All		1916	103[4]				
1905	357	*All*	Charter city of Tonawanda. [Previous charter, L. 1903, ch. 22.]						
		Tit. 2, § 6		1906	410	1			
		Tit. 2, § 6, subds. 1–4		1917	793	1			
		Tit. 2, § 6, subd. 6					1917	333	12
		Tit. 2, § 7		1906	410	1			
		Tit. 2, § 7, subd. 8		1917	333	13			
		Tit. 2, § 7		1917	793	2			
		Tit. 2, § 8		1917	793	3			
		Tit. 5, § 5		1917	793	4			

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[1] Consolidating affiliated organizations.

[2] Adds the name of "Jean Dupuy."

[3] Section 2 was restored to original form and left unamended.

[4] Elect directors of the Nathaniel Stacey Memorial Association.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1905	357		Tit. 6, schedule of sections	1917	793	4a			
			Tit. 6, §§ 8–12 (added)	1917	793	5			
			Tit. 7, schedule of sections	1917	333	1			
			Tit. 7, §§ 1–6	1917	333	2–7			
			Tit. 7, § 7	1917	793	6			
			Tit. 7, §§ 8, 9, 11, 12	1917	333	8–11			
			Tit. 9, §§ 1, 2	1917	793	7, 8			
			Tit. 10, § 2	1917	333	15			
			Tit. 11, § 9	1906	394	1			
			Tit. 11, § 9	....	...	....	1917	793	9
			Tit. 11, § 9 (added)	1917	793	9			
			Tit. 14, § 1	1914	301				
			Tit. 16, § 5	1917	793	10			
			Tit. 17, schedule of sections	1917	793	11			
			Tit. 17, § 1	1906	410				
			Tit. 17, § 1, subd. 4	1907	540				
			Tit. 17, § 1, subd. 4	1911	345				
			Tit. 17, § 1, subd. 6	1915	220				
			Tit. 17, § 1, subd. 7	1917	333				
			Tit. 17, § 1, subd. 9	1907	540				
			Tit. 17, § 1, subd. 9	1908	390				
			Tit. 17, § 1, subd. 17	1911	345				
			Tit. 17, § 1	1917	793	12			
			Tit. 17, § 2	1917	793	13			
			Tit. 18, §§ 14–16	1917	793	14			
			Tit. 19, schedule of sections	1917	793	15			
			Tit. 19, § 1	....	...	....	1917	793	16
			Tit. 19, § 1 (added)	1917	793	16			
			Tit. 19, § 2	1917	793	17			
			Tit. 19, § 3	1906	410				
			Tit. 19, § 3	1907	540	2			
			Tit. 19, § 3	1917	793	18			
			Tit. 19, § 4	....	...	....	1917	793	19
			Tit. 19, §§ 5–11	1917	793				
			Tit. 20, schedule of sections	1917	793	23			
			Tit. 20, § 1	1906	410				
			Tit. 20, § 1	....	...	....	1917	793	24
			Tit. 20, § 1 (added)	1917	793	24			
			Tit. 20, § 2	1917	793	25			
			Tit. 20, § 3	....	...	....	1917	793	26
			Tit. 20, §§ 4–7	1917	793	27–30			
			Tit. 20, § 8	1917	333	16			
			Tit. 20, §§ 8–11	1917	793	31–34			
			Tit. 20, § 12	....	...	....	1917	793	35
			Tit. 20, §§ 13, 14	1917	793	36			
			Tit. 20, § 15	1906	410	6			
			Tit. 20, § 15	1917	793	37			
			Tit. 20, §§ 16, 17	1917	793	38			
			Tit. 20, § 19	1906	410	6			
			Tit. 20, § 19, 20	1917	793	39, 40			
			Tit. 20, § 20a (added)	1911	165				
			Tit. 20, § 20a	1917	793	41			
			Tit. 20, §§ 21–27	1917	793	42, 43			
			Tit. 21, § 1	....	...	....	1917	793	44
			Tit. 21, § 1 (added)	1917	793	44			
			Tit. 21, §§ 2–5	1917	793				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1905	357	Tit. 21, § 6		1906	410	7			
		Tit. 21, § 6		1915	220				
		Tit. 21, § 6		1917	793	46			
		Tit. 22, §§ 1–13		....	...	....	1917	783	6
		Tit. 23, § 2		1917	793	47			
		Tit. 24, schedule of sections		1917	793	48			
		Tit. 24, §§ 4, 5, 7–11		1917	793	49			
1905	364	*All* All	City of Lockport to borrow money	....	...	....	1917	786	6
1905	371	*All* All	Village of Canandaigua, amending and in part repealing L. 1893, ch. 666.	....	...	....	1913	371	251
1905	468	*All* 20	City of Rome, amending L. 1904, ch. 650	....	...	....	1917	786	6
1905	486	*All* All	City of Watertown, amending L. 1897, ch. 760	....	...	....	1917	786	6
1905	513	*All* All	Municipal Court Act of New York city, amending L. 1902, ch. 580.	....	...	....	1915	279	184
1905	526	*All* All	Incorporating Staten Island Association of Arts and Sciences.	1918	57[1]				
1905	580	*All* All	City of Rensselaer, bonds for street pavements and fire house, amending L. 1897, ch. 359.	....	...	....	1913	481	435
1905	593	*All*	Charter city of Johnstown. [Previous charter, L. 1895, ch. 568.]						
		10		1916	326				
		11–13		1910	660				
		11–13		1916	326				
		19, 20		1910	660				
		19, 20		1916	326				
		21		1907	42				
		21		1910	661				
		21		1916	326				
		21a (added)		1916	326				
		26, 28		1910	660				
		26, 28		1916	326				
		29 (added)		1910	660				
		29		1916	326				
		51, 54, 56, 57		1916	326				
		61, 62		1910	660				
		61, 62		1916	326				
		67		1916	326				
		67		1918	381				
		68, 72, 75, 78		1916	326				
		98		1910	660				
		98		1916	326				
		101, 104, 109, 122, 125, 129, 130, 133, 134, 135		1916	326				
		136, subd. a		1907	671				
		136, subd. a		1916	326	33			
		144, 169		1916	326	34, 35			
		183		1909	325				
		183		1916	326	36			

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[1] Corporate existence continued under name of Staten Island Institute of Arts and Sciences.

The italicised matter following each chapter number indicates the part of such chapter treated a private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly re by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1905	593	190, 191		1916	326	37, 38		
		201, subd. 8		1916	326	39		
		220–235		....	...	....	1917	786
		236		1910	660			
		236–241		....	...	....	1917	786
		252		1916	326			
		260 (renumbered from 266)		1916	326			
		261, 264		1916	326			
		266		1916	326			
		300, 304		1916	326			
		316a (added)		1916	326			
		All		1914	104[1]			
		All		1915	172[2]			
1905	619	*All*	Board of trustees of village of					
		All	White Plains to appoint assessor.	....	...	....	1915	356
1905	646	*All*	Sewer in Westchester county.					
		3		1912	550			
		4		1907	747			
		4		1912	550			
		14		1907	747			
		14		1911	869			
		14		1912	550			
		14		1914	487			
		14		1916	44			
		17		1913	417			
		18		1915	655			
		19		1911	869			
		19		1915	655			
		19a–19c (added)		1915	655			
		All		1915	425[3]			
		All		1916	245[3]			
		All		1917	403[3]			
		All		1917	646[4]			
1905	684	*All*	Department of public works of					
		1	city of Syracuse, repealing	1917	163			
		3, 6	generally L. 1885, ch. 26	1916	415			
		7		1911	71			
		7		1916	61			
		19		1907	288			
		19		1908	329			
		19		1909	215			
		19		1914	298			
		19		1916	415			
		20		1909	215			
		20		1914	298			
		20		1916	415			
		30		1916	61			
		30		1917	113			
		31		....	...	....	1914	300
		31 (added)		1916	415			

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[1] Pavement bonds.

[2] Bond issue to pay debts.

[3] Bond issue for sewers.

[4] Bronx valley sanitary sewer district, supplementing L. 1905, ch. 646.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1905	684	32		....	...	....	1914	300	
		32 (added)		1916	415				
		33-52		....	...	....	1914	300	
		All		1914	300[1]				
1905	724	*All*	Additional supply of water for New York city						
		11		1906	314				
		11		1916	527				
		35a (added)		1914	478				
		40		1916	601				
		42		1906	314				
		42		1916	527				
1905	731	*All*	Widening of Pelham avenue and bridge over tracks of New York and Harlem Railroad in New York city.						
		4, 5		1917	643				
1905	749	*All*	Incorporating the Hellenic Eastern Orthodox Christian Church of New York.						
		1		1914	212				
1906	10	*All*	Office of supervisor in Onondaga county a salaried office						
		7		1916	180				
		8		1916	180				
		8a (added)		1916	180				
1906	20	*All*	Office of purchasing agent for Onondaga county						
		2		1907	111				
		2		1914	330				
1906	21	*All*	City of Olean, amending and in part repealing L. 1893, ch. 478						
		All		....	...	....	1914	436	
		All		....	...	....	1915	535	136
1906	28	*All*	Bonds and certificates of indebtedness of village of Port Chester						
		1		1912	16				
		All		1912	29[2]				
1906	43	*All*	Village of White Plains to acquire lands for public library, amending L. 1905, ch. 148.						
		All		....	...	....	1915	356	307
1906	56	*All*	Changing name of "The Trustees of the Theological Seminary of Auburn in the State of New York" to Auburn Theological Seminary, amending L. 1820, ch. 215.						
		2		1917	329				
1906	65	*All*	Office of sheriff of Ulster county a salaried office						
		8		1917	21				
1906	68	*All*	Public schools of city of Auburn, amending L. 1875, ch. 577						
		All		....	...	....	1917	786	6
1906	75	*All*	Department of assessment and taxation of the city of Syracuse						
		1a (added)		1917	816				
		2		1917	816				
		7a (added)		1912	137				
		8		1916	89				
		9		1908	320				
		9		1917	816				
		16		1918	475				
		18-20		1912	409				

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[1] Department of public works.

[2] Bond issue to repair "Old Willet avenue fire house."

The italicised matter following each chapter number indicates the part of such chapter treated as s private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repe by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	● §	Law	Ch.
1906	75	23		1912	408			
		27		1912	408			
		44, 45 (added)		1911	385			
		44, 45		1916	244			
1906	80	*All*	Macadamizing streets and construction of drains, curbing and gutters in village of White Plains, Westchester county.					
		All		....	...	....	1915	356
1906	94	*All*	Village of White Plains, amending L. 1867, ch. 518					
		All		....	...	....	1915	356
1906	125	*All*	Illuminating gas in New York city, quality, pressure and price, repealing L. 1897, ch. 385.					
		1, subds. 1, 2		1916	604			
		1, subds. 1, 2		1917	666			
		3–5 (renumbered 5–7)		1916	612			
		3, 4 (added)		1916	612			
		5–7 (renumbered from 3–5)		1916	612			
1906	165	*All*	Police department for village of White Plains, Westchester county, amending L. 1904, ch. 306.					
		All		....	...	....	1915	356
1906	185	*All*	Charter city of Auburn. [Previous charter, L. 1879, ch. 53.]					
		13		1916	388			
		34		1918	479			
		51a (added)		1917	441			
		64		1910	593			
		64		1918	479			
		75		1916	189			
		104a (added)		1916	375			
		118		1915	541			
		All		1917	379[1]			
1906	214	*All*	Municipal court of New York city, amending L. 1902, ch. 580.					
		All		....	...	....	1915	279
1906	229	*All*	Village of Canandaigua, amending L. 1893, ch. 666					
		All		....	...	....	1913	371
1906	288	*All*	Charter city of Hornell. [Previous charter (Hornellsville), L. 1888, ch. 40.]					
		11, 12, 13		1916	409			
		19		1909	363			
		19		1916	409			
		20, 37		1916	409			
		38, subds. 1, 31, 32		1916	409			
		50, 54		1916	409			
		55		1909	363			
		55		1916	409			
		56		1916	409			
		58		1915	398			
		70		1916	409			
		71		1907	449			

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[1] Bonds for filtering plant.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1906	288	71		1912	128				
		71		1916	409				
		Tit. 6		1916	409				
		99-105		1916	409				
		105a (added)		1916	409				
		106-120		1916	409				
		121		1907	449				
		121		1916	409				
		122-124		1916	409	41-43			
		125 (added)		1916	409	44			
		152-154		1916	409	45-47			
		156		1907	449				
		156		1909	363				
		156		1916	409				
		157		1907	449				
		157		1909	363				
		157		1916	409	49			
		158, 159, 163, 164		1916	409	50-53			
		Tit. 9		1916	409	54			
		170-174		1916	409	55-59			
		175		1909	363				
		175		1916	409	60			
		176-185		1916	409	61-70			
		190-193		1916	409	71-74			
		193a (added), 194		1912	128				
		195-202, 204, 210		1916	409	75-84			
		Tit. 12		1916	409	85			
		211-213, 215-219		1916	409	86-93			
		222					1916	409	94
		223					1916	409	95
		224, 225, 229, 230		1916	409	96-99			
		All		1913	291[1]				
		All		1916	69[2]				
1906	302	*All*	Issue of canal bonds.						
		All		1912	110[3]				
		All		1912	116[4]				
		All		1912	209[5]				
		All		1913	804[6]				
		All		1913	805[7]				
		All		1916	642[8]				
		All		1918	353[9]				
1906	335	*All*	City of Niagara Falls, amending and in part repealing L. 1904, ch. 300; L. 1905, chs. 463, 614.						
		17					1917	786	6

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[1] Extension of time for collection of taxes.

[2] Bond issue to meet indebtedness.

[3] Appropriation for canal debt interest.

[4] Appropriation for interest.

[5] Annual contribution for canal debt sinking fund.

[6] Direct tax for canal sinking funds.

[7] Appropriation to pay interest on debt.

[8] Appropriation from sinking fund to pay interest on Erie, Champlain and Oswego canal bonds.

[9] Appropriation for payment of interest.

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch
1906	344	*All*	Appropriation for Metropolitan Museum of Art in Central Park in New York city.					
		1		1915	156			
1906	469	*All*	Bonds of the state for improvement of highways					
		All		1912	112[1]			
		All		1912	117[2]			
		All		1912	209[3]			
		All		1912	247[4]			
		All		1912	518[5]			
		All		1913	359[6]			
		All		1913	360[7]			
		All		1913	362[8]			
		All		1913	768[9]			
		All		1913	786[10]			
		All		1913	787[11]			
		All		1913	810[12]			
		All		1914	271[13]			
		All		1914	275[14]			
		All		1915	690[15]			
		All		1915	729[16]			
		All		1916	642[17]			
		All		1918	353[18]			
		All		1918	368[19]			
1906	477	*All*	Charter city of Elmira. [Previous charter, L. 1894, ch. 615.]					
		4-6, 11, 14, 15, 18		1915	377			
		26		....	...	....	1915	37
		26 (added)		1915	377			
		31		1918	481			
		32, subd. d		1915	377			
		32, subd. h		1911	674			
		32, subd. h		1913	8			
		33		1912	523			
		36, 44, 48		1915	377			
		49		1910	662			
		49		1911	194			

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[1] Interest on highway improvement debt.
[2] Appropriation to pay interest.
[3] Annual contribution for sinking fund.
[4] Appropriation for highway improvement.
[5] Appropriation for rebuilding bridge across South Bay.
[6] Appropriation for highways.
[7] Appropriation for Routes Nos. 2, 6.
[8] Appropriation for certain state routes.
[9] Expenditure of moneys heretofore appropriated.
[10] Reappropriation for new state routes in Essex and Warren counties.
[11] Rate of interest upon bonds.
[12] Highway improvement sinking fund.
[13] Appropriation to highway improvement sinking fund.
[14] Reappropriation for additions to Route No. 30 in counties of Niagara and Orl
[15] Appropriation for interest.
[16] Annual contribution for highway improvement sinking fund.
[17] Payment of interest on highway improvement bonds.
[18] Appropriation for payment of interest.
[19] Sinking fund.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1906	477	49		1915	377				
		75		1910	662				
		75		1918	481				
		136		1915	377				
		141		1910	662				
		141		1917	164				
		147–150, 152		1915	377				
		153, subd. a		1915	377	20			
		154, subd. a		1910	662	10			
		154, subd. a		1915	377	21			
		154, subds. d, h		1915	377	22, 23			
		155		1910	662	12			
		155		1915	377	24			
		157		1915	377	25			
		158		1910	662	13			
		158		1915	377	26			
		160		1910	662	15			
		160		1915	377	27			
		162		1915	377	28			
		163		1910	662	16			
		163		1915	377	29			
		173		....	...	....	1915	377	30
		173 (added)		1915	377	30			
		174		1915	377	31			
		175		....	...	....	1915	377	32
		175 (added)		1915	377	32			
		176		....	...	....	1915	377	33
		177, 217		1915	377	34, 35			
		All		1913	77[1]				
		All		1913	660[2]				
		All		1916	102[3]				
		All		1916	253[4]				
		All		1917	394[5]				
1906	495	*All*	School commissioners of city of Ogdensburg, amending L. 1893, ch. 454.						
		All		....	...	....	1917	786	6
1906	520	*All*	Municipal court of city of Syracuse, repealing generally						
		1		1918	38				
		3a (added)		1916	437				
		3a		....	...	....	1918	38	2
		6, 7, 14, 34		1918	38				
		37		1916	437				
		37		....	...	....	1918	38	4
		37 (added)		1918	38				
1906	586	*All*	Park commission in city of Syracuse						
		5		1917	398	1			
		6, 7		....	...	....	1917	398	2
		8 (renumbered 6)		1917	398	3			
		9, 10 (renumbered 7, 8)		1917	398	4			

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[1] Bonds for paving purposes.
[2] Water department.
[3] Tuberculosis hospital.
[4] Bond issue for paving.
[5] Planning commission must approve maps.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1906	586	All	....	1917	397[1]				
1906	595	*All*	City of Newburgh, improvement of streets, amending L. 1865, ch. 541, as amended by L. 1898, ch. 87.						
		All		....	...	....	1916	575	198
1906	617	*All*	Site for New York State Training School for Boys, amending L. 1904, ch. 718.						
		All		....	...	....	1918	543	6
1906	631	*All*	Water supply and water department of city of Syracuse.						
		2a (added)		1918	449				
1906	633	*All*	Village of Canandaigua, amending L. 1893, ch. 666.........						
		All		....	...	....	1913	371	251
1906	639	*All*	Commission to investigate means for protecting waters of New York bay and vicinity against pollution...........						
		5		1908	422	1			
		5		1910	200				
		5		1913	332	1			
1906	661	*All*	Indexing and preservation of records, documents, books, maps and papers in office of New York county..........						
		4c (added)		1909	471				
		4c		1911	292				
		4c		1912	167				
1906	670	*All*	New state prison in eastern part of state to take place of Sing Sing prison.						
		All		....	...	....	1916	594	7
1906	678	*All*	State education building, library and state museum..........						
		All		1912	517[2]				
1906	689	*All*	Improvement of river front in city of Albany............						
		7		1915	58				
1907	118	*All*	School district number nine in town of Pomfret, amending L. 1858, ch. 34.						
		All		....	...	....	1917	786	6
1907	120	*All*	Children's fireproof museum building in borough of Brooklyn.						
		1		1912	130				
1907	130	*All*	City of Hudson, amending charter, L. 1895, ch. 751, tit. 20, § 79, subd. 2, § 80; tit. 24, §§ 150a–150c (added).						
		All		....	...	....	1917	786	6
1907	161	*All*	Firemen's relief and pension fund for city of Utica.						
		2, subd. 8 (added)		1916	489				
		5, subd. 1		1912	345				
		5, subd. 4 (added)		1912	345				
1907	162	*All*	City of Olean, fees of officers in certain cases, amending L. 1893, ch. 478..............						
		All		....	...	....	1914	436	
		All		....	...	....	1915	535	130
1907	164	*All*	Incorporating "The Queens Borough Public Library," and permitting libraries in borough of Queens to convey property thereto.						
		3		1913	541				
1907	165	*All*	City of Mount Vernon, public libraries, amending L. 1892, ch. 182.						
		All		....	...	....	1917	786	6

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[1] Department of parks.

[2] Appropriation.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1907	182	*All*	Firemen's pension fund for city						
		2, subd. 5	of Schenectady	1918	527				
1907	183	*All*	Police pension fund for the city						
		1	of Schenectady	1917	378				
		2, subds. 5, 7		1917	378				
		3, subds. 1, 2, 3		1917	378				
1907	203	*All*	Charter city of Newburgh.						
		Tit. 3, § 9,	[Previous charter, L. 1865, ch.						
		subd. 37	541; subsequent charters, L.	1912	414				
		Tit. 4, § 7	1916, ch. 575, L. 1917, ch.	1912	395				
		Tit. 12,	590.]						
		§ 4		....	...	....	1917	786	6
		All		....	...	....	1916	575	
		All		1912	260[1]		1916	575	
		All		1912	284[2]				
		All		1912	472[3]				
		All		1916	65[4]				
1907	205	*All*	Police pension fund for city of						
		2, subd. 5	Newburgh	1915	205				
		3, subd. 7	(added)	1915	205				
1907	212	*All*	Young Men's Association for						
		3	Mutual Improvement in city of Albany, amending L. 1872, ch. 341, as amended by L. 1900, ch. 261.	1913	564				
1907	220	*All*	Municipal court of New York						
		All	city, amending L. 1902, ch. 580.	....	...	....	1915	279	184
1907	258	*All*	Police pension fund for police						
		All	force of city of Watertown	....	...	....	1915	538	8
1907	272	*All*	Supplying village of White						
		All	Plains with water, amending L. 1896, ch. 769.	....	...	....	1915	356	307
1907	299	*All*	Union free school district number						
		All	one of town of White Plains to acquire land for athletic field.	....	...	....	1915	356	307
1907	304	*All*	Municipal court of New York						
		All	city, amending L. 1902, ch. 580.	....	...	....	1915	279	184
1907	308	*All*	City of Rensselaer, criminal ex-						
		All	penses chargeable to Rensselaer county, amending L. 1897, ch. 359.	....	...	....	1913	481	435
1907	309	*All*	City of Rensselaer, salaries of						
		All	policemen and meetings of police commissioners, amending L. 1897, ch. 359.	....	...	....	1913	481	435
1907	315	*All*	Taxation for school purposes of						
		All	state lands in school districts in towns of Hyde Park and Poughkeepsie, Dutchess county.	....	...	....	1917	46	

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[1] Appropriation for Firemen's Association and Grand Army conventions.
[2] Sewer tax certificates cancelled.
[3] Bonds for improving Water and Colden streets.
[4] Bond issue for fire apparatus.

The italicised matter following each chapter number indicates the part of such chapter treated a private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly re by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1907	317	*All*.....	Village of White Plains to borrow money for garbage incineration plant.					
		All......		....	...	....	1915	356
1907	334[1]	*All*.....	City of Olean, ordinances, amending L. 1893, ch. 478...					
		All......		....	...	....	1914	436
1907	337	*All*.....	Police department for village of White Plains, Westchester county, amending L. 1904, ch. 306.					
		All......		....	...	....	1915	356
1907	342	*All*.....	City court of Albany, amending L. 1898, ch. 312.........					
		All......		....	...	....	1914	368
1907	351	*All*.....	Park board in the city of Utica.					
		3a (added)...........................		1913	276			
1907	355	*All*.....	Incorporating Long Sault Development Company........					
		All......		....	...	....	1913	452
		All......	....	1913	453[2]			
		All......	....	1917	636[3]			
1907	356	*All*.....	Construction of intercepting sewers in city of Syracuse...					
		1.......		1915	46			
		3..............	....	1914	437			
		4..............	....	1909	107			
		4..............	....	1916	284			
		8a, 8b (added)........................		1918	521			
		9..............	....	1916	284			
		9a, 9b (added)........................		1916	284			
		11......	....	1909	107			
		11......	....	1911	22			
		11......	....	1914	437			
		11......	....	1915	46			
		11......	....	1916	284			
1907	384	*All*.....	Moneys received by town of Hounsfield from sale of stock in Carthage, Watertown and Sacketts Harbor Railroad Company, amending L. 1895, ch. 228.					
		All......		....	...	....	1915	535
1907	387	*All*.....	Charter city of Jamestown. [Previous charter, L. 1886, ch. 84.]...................					
		2.......		1908	75			
		2.......		1916	281			
		10......	....	1916	70			
		10......	....	1918	99			
		11......	....	1909	359			
		11......	....	1916	70			
		11......	....	1918	99			
		11......	....	1918	525			
		12, 14...	....	1916	70			
		16......	....	1918	195			
		17......	....	1916	70			
		17......	....	1918	99			
		17......	....	1918	525			
		22......	....	1918	525			

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[1] L. 1915, ch. 535, repeals L. 1907, ch. 384. Evidently intended for ch. 334.
[2] Claims to be determined by board of claims.
[3] Section 2 of ch. 452, L. 1913, re-enacted, providing repayment of moneys paid to sta
[4] Repeal of L. 1907, ch. 334, amending charter of village of Olean evidently intended

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1907	387	25		1909	359				
		25		1912	80				
		25		1916	70				
		25		1918	99				
		26		1908	75				
		26		1916	70				
		26		1918	99				
		28		1912	80				
		28, subd. 1		1910	58				
		28, subd. 1		1914	280				
		28, subd. 2		1918	524				
		28, subds. 4, 5		1909	359				
		28, subds. 4, 5		1918	524				
		28, subds. 6		1918	524				
		28a (added)		1918	523				
		31, 34		1912	80				
		36		1916	70				
		38, subd. 1		1909	359				
		38, subd. 1		1916	338				
		Tit. 2a (§§ 40–45) added		1916	292				
		50		1908	75				
		50		1909	359				
		50		1916	70				
		56a (added)		1917	663				
		61		1914	280				
		64		1909	359				
		64		1910	225				
		64		1912	80				
		64		1917	659				
		64a (added)		1909	359				
		64a		1910	225				
		64a		1914	280				
		98		1914	280				
		116		1912	80				
		127		1909	359				
		127		1916	338				
		131		1909	359				
		131		1918	525				
		137		1912	80				
		138–145		....	...	....	1918	99	6
		138, 139 (added)		1918	99				
		140–145a (added)		1918	99				
		173		1912	80				
		178		1909	359				
		178		1912	80				
		178		1914	280				
		179		1914	280				
		179		1916	282				
		183		1909	359				
		183		1916	282				
		188		1909	359				
		188		1914	280				
		188		1917	658				
		192		1909	359				
		192		1914	280				
		200, 201		1914	280				

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Statutes				Amended or otherwise affected by			Expressly by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1907	387	202		1909	359			
		202–206		1914	280			
		230, 231		1918	525	5		
		231a, 231b (added)		1918	525	6		
		241, 265		1918	525	7		
		270–279, 279a (added)		1914	422			
		280a (added)		1911	897			
		280a		1916	283			
		All		1918	194[1]			
1907	392	*All*	Ferry from highway adjacent to farm of George H. Huber, Essex county, across Lake Champlain.					
		All		1918	214[2]			
1907	412	*All*	Court of general sessions of city and county of New York, repealing in part L. 1882, ch. 410.					
		10 (renumbered 11)		1918	645			
		10 (added)		1918	645			
1907	415	*All*	Village of Norwich, paid police force, amending L. 1904, ch. 7.					
		All		....	...	....	1914	34
1907	425	*All*	Municipal court of New York city, amending L. 1902, ch. 580.					
		All		....	...	....	1915	279
1907	451	*All*	Municipal court of New York city, amending L. 1902, ch. 580.					
		All		....	...	....	1915	279
1907	459	*All*	School district number six in town of Lyons, Wayne county, repealing as amended, L. 1856, ch. 129.					
		1		1913	376			
1907	524	*All*	Site for state hospital for insane in southeastern part of state.					
		All		....	...	....	1918	543
1907	537	*All*	Schools and academies in village of Ogdensburg, amending L. 1857, ch. 382.					
		All		....	...	....	1917	786
1907	543	*All*	Department of public instruction in city of Syracuse, repealing generally L. 1885, ch. 26; L. 1887, ch. 368; L. 1889, ch. 18; L. 1892, ch. 626; L. 1893, ch. 524; L. 1893, ch. 531; L. 1894, ch. 636; L. 1895, ch. 950; L. 1897, ch. 752; L. 1898, ch. 48.					
		All		....	...	....	1917	786
1907	591	*All*	City of Newburgh, amending L. 1907, ch. 203.					
		All		....	...	....	1916	575
1907	594	*All*	Preserving waters of Bronx river from pollution.					
		10		1913	757			
		13–15		1916	599			
		15, subd. b		1913	757			
		15, subd. h		1916	599			
		15i–15l (added)		1916	599			
		18a (added)		1913	757			
		19		1913	757			

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[1] Bond issue for paving.

[2] Franchise renewed.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1907	595	*All*	City of Lockport to borrow						
		All	money for High street school building.	....	...	....	1917	786	6
1907	603	*All*	Greater New York charter,						
		All	amending L. 1901, ch. 466...	....	...	....	1915	279	184
1907	604	*All*	Village of White Plains, amend-						
		All	ing L. 1867, ch. 518	....	...	....	1915	356	307
1907	619	*All*	Village of Canandaigua, amend-						
		All	ing L. 1893, ch. 666	....	...	....	1913	371	251
1907	653	*All*	City of Middletown, amending						
		6	L. 1902, ch. 572	....	...	....	1917	786	6
1907	664	*All*	Municipal court of New York						
		All	city, amending L. 1902, ch. 580.	....	...	....	1915	279	184
1907	676	*All*	Extension of Riverside Park in						
		1	New York city by filling in	1913	90				
		2	certain land under water....	1913	90				
1907	711	*All*	Public park in town of Rye,						
		8, 9, 12	Westchester county	1915	74				
1907	712	*All*	Use and occupancy of the Hall						
		1	of Records in the county of	1912	311				
		1	of New York	1915	582				
		1		1917	218				
1907	718	*All*	Bonds for improvement of high-						
		All	ways, amending and in part repealing L. 1906, ch. 469.	1913	787[1]				
1907	750	*All*	Charter village of Lyons, Wayne						
		4, 35	county. [Previous charter,	1912	133				
		133a (added)	L. 1854, ch. 388.]	1914	311				
1907	751	*All*	Charter city of Binghamton.						
		74	[Previous charter, L. 1888, ch.	1913	158				
		204	214; supplemental charter, L.	1912	402				
		384–388	1917, ch. 668.]	....	...	....	1917	786	6
		389		1914	289				
		389		....	...	....	1917	786	6
		390–405		....	...	....	1917	786	6
		414		1911	337				
		414		1914	288				
		Tit. 17a, §§ 415a–415p (added)		1915	268				
		All, except tit. 17a.		....	...	....	1917	668	
		All		1912	404[2]				
		All		1913	829[3]				
		All		1914	406[4]				
		All		1915	235[5]				
		All		1915	236[6]				
		All		1917	508[7]				

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[1] Rate of interest upon bonds.

[2] Trunk sewer to Lestershire.

[3] School maintenance bonds.

[4] Legalizing issuance of bonds for dyke wall along bank of Chenango river.

[5] Temporary paving notes.

[6] Bonds legalized.

[7] Pay City Coal Company claim.

The italicised matter following each chapter number indicates the part of such chapter treated a private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly r by	
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**
1907	752	*All*	Charter city of North Tonawanda. [Previous charter, L. 1897, ch. 361.]					
		Tit. 3, § 3		1911	263			
		Tit. 3, § 3		1912	417			
		Tit. 3, § 3		1917	717			
		Tit. 3, § 4		1908	247			
		Tit. 3, § 4		1916	434			
		Tit. 3, § 4		1917	717			
		Tit. 3, § 5		1916	434			
		Tit. 3, § 5		1917	717			
		Tit. 3, § 6		1911	263			
		Tit. 3, § 6		1912	417			
		Tit. 3, § 6		1916	434			
		Tit. 3, § 6		1917	717			
		Tit. 3, § 8		1908	247			
		Tit. 3, § 8		1911	263			
		Tit. 3, § 8		1912	417			
		Tit. 3, § 8		1917	717			
		Tit. 3, § 10		1908	247			
		Tit. 3, § 10		1911	263			
		Tit. 3, § 10		1912	417			
		Tit. 3, § 14 (added)		1911	263			
		Tit. 3, § 14		1912	417			
		Tit. 6, § 7		1917	717			
		Tit. 7, §§ 1–6, 8–12		1917	717			
		Tit. 7, § 13		1910	43			
		Tit. 7, § 13		1917	717			
		Tit. 7, § 14		1917	717			
		Tit. 17, § 3		1916	434			
		Tit. 18, §§ 1–3		....	...	....	1917	78
		Tit. 22, § 1		1917	717	10		
		Tit. 24, § 1, subd. 9 (added)		1908	247			
		Tit. 24, § 1		1911	445			
		Tit. 24, § 1		1912	394			
		Tit. 24, § 1		1916	434			
		Tit. 24, § 1		1917	717	11		
		Tit. 26, § 12		1917	717	12		
		Tit. 30, § 1		1917	717	13		
		All		1914	229[1]			
1907	753	*All*	Charter city of Port Jervis. [Previous charter (village), L. 1896, ch. 529.]					
		13, subd. 2		1915	160			
		54, subd. 9		1918	175			
		60, subd. 23		1915	159			
		71		1914	296			
		130, 132.		1915	160			
1907	755	*All*	Charter city of Rochester. [Previous charter, L. 1880, ch. 14.]					
		3, subd. 5		1917	479			
		3, subd. 10		1913	659			
		3, subd. 10		1918	547			
		3, subd. 14		1908	368			
		3, subd. 14		1914	122			
		3, subd. 17		1913	659			
		3, subd. 17		1915	359			
		3, subd. 17		1917	479			
		3, subd. 18		1913	659			

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[1] Portion of Col. John Sweeney's Tonawanda Rural Cemetery taken for public stree

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1907	755	3, subd. 19		1913	659				
		3, subd. 19		1918	547				
		3, subd. 21		1913	659				
		3, subd. 22		1913	659				
		3, subd. 23 (added)		1915	359				
		3, subd. 23		1918	547				
		3, subd. 24 (added)		1918	547				
		14		1915	13				
		14		1918	495				
		15		1911	340				
		15		1914	342				
		15		1915	13				
		15		1915	394				
		15		1917	505				
		16		1915	394				
		16, 17		1918	495				
		18		1911	340				
		18		1914	342				
		18		1915	13				
		18		1915	394				
		18, 21		1917	505				
		26		1918	497				
		27		1918	495				
		61		1918	497				
		62		1914	342				
		62		1916	486				
		62		1918	495				
		65		1911	74				
		65		1918	495	6			
		90		....	...	....	1917	786	6
		90 (added)		1918	547	2			
		91		1918	547	3			
		96		1910	250				
		96		1912	55				
		101		1916	486				
		102		1918	495				
		113		1918	547	4			
		121		1916	486				
		146		1918	547	5			
		168		1908	352				
		168		1917	505				
		188, subd. 3 (added)		1909	553				
		188, subd. 3		1916	486				
		188, subd. 4 (added)		1912	354				
		191		1918	547	6			
		241		1914	121				
		241		1915	13				
		273		1912	370				
		276–279 (added)		1914	342				
		287		1915	13				
		289		1914	121				
		289		1915	13				
		290 (added)		1917	505				
		291 (added)		1917	505				
		291, subd. 2		1918	547	7			
		292–294 (added)		1917	505				

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1907	755	300, 301, 303, 304		1915	13				
		305		1908	368	4			
		305		1915	13				
		335, subd. 4		1916	486				
		336, subd. 1, ¶ (f)		1912	54				
		351		1917	505				
		353 (added)		1912	59				
		353		1918	495	8			
		381		....	...	....	1917	786	6
		381 (added)		1918	547	8			
		382		....	...	....	1917	786	6
		383, subd. 1		1915	13				
		383, subd. 9 (added)		1911	340				
		383, subd. 7		1913	659				
		383, subd. 7		1915	359				
		383–404		....	...	....	1917	786	6
		407		1911	340				
		407		1914	121				
		408, 409 (added)		1914	121				
		426		1918	495	9			
		428		1917	505				
		Art. 16, § 466		....	...	....	1918	495	10
		Art. 16, § 466 (added)		1918	495	10			
		Art. 16, § 467		1915	13				
		Art. 16. § 467		....	...	....	1918	495	10
		Art. 16, § 467 (added)		1918	495	10			
		Art. 16, §§ 468–471		....	...	....	1918	495	10
		Art. 16, §§ 468–471 (added)		1918	495	10			
		Art. 16, § 472		1908	368				
		Art. 16, §§ 472–477		....	...	....	1918	495	10
		Art. 16, §§ 473–477 (added)		1918	495	10			
		Art. 16, § 478		1915	13				
		Art. 16, §§ 478–484		....	...	....	1918	495	10
		Art. 16, §§ 478–484 (added)		1918	495	10			
		Art. 16, §§ 488–494 (added)		1918	495	10			
		Art. 17, §§ 495–525		....	...	....	1918	495	10
		Art 16, §§ 495–521 (added)		1918	495	10			
		Art. 17, § 526		1910	170				
		Art. 17, § 526		1916	486				
		Art. 17, §§ 526–529		....	...	....	1918	495	10
		Art. 16, §§ 530–536 (added)		1918	495	10			
		Art. 19, §§ 560–563		....	...	....	1914	342	
		Art. 19, §§ 560–565 (added)		1915	394				
		631		1908	368				
		631		1913	659				
		631, subds. 1, 9, 10		1915	359				
		631, subds. 1, 9, 10		1918	547	9			
		631, subds. 11–15 (added)		1915	359				
		631, subd. 15		1917	505				
		631, subds. 16, 17 (added)		1915	359				
		631, subds. 18–26 (added)		1918	547	10			
		631, subds. 27–29 (added)		1918	547	11			
		636		1913	659				
		636		1915	359				
		636, subd. 1		1918	547	12			

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1907	756	*All*	Charter city of Schenectady.						
		2	[Previous charter, L. 1903, ch.	1914	58				
		3, subds.	371.]						
		8, 12		1914	58				
		31		1917	645				
		173		1908	59				
		173		1914	123				
		173a (added)		1914	123				
		201a		1916	436				
		Art. 7, §§ 202–226		....	...	....	1918	616	
		Art. 7, §§ 202–226, 226a–226h (added)		1918	616				
		All		1915	671[1]				
		All		1917	735[2]				
1908	22	*All*	Municipal court of New York						
		All	city, amending L. 1902, ch. 580.	....	...	....	1915	279	184
1908	29	*All*	Charter city of Glens Falls.						
		9, subd. 3	[Previous charter (village), L.	1917	183				
		9, subd. 3	1839, ch. 157]	1918	483				
		10, 20, 38		1909	550				
		10, 20, 38		1917	183	2			
		53, subd. 8		1917	183	3			
		142, 143		1909	550	20, 21			
		142, 143		1917	183	4			
		144		1917	183	5			
		144a (added)		1917	183	6			
		145		1917	183	7			
		146		1909	550	22			
		146		1917	183	8			
		147		1909	550	23			
		147		1914	335				
		147		1917	183	9			
		149, 150		1917	183	10			
		167		....	...	....	1917	786	6
		168		1909	550				
		168, 168a, 169, 170		....	...	....	1917	786	6
		182		1917	183	10			
1908	51	*All*	Legalizing proceedings of union						
		All	free school district number one of town of Hadley, Saratoga county, and town of Luzerne, Warren county, amending L. 1906, ch. 122.	....	...	....	1917	786	6
1908	66	*All*	Village of White Plains to ac-						
		All	quire lands for fire department purposes, amending L. 1899, ch. 255.	....	...	....	1915	356	307
1908	67	*All*	Village of White Plains, amend-						
		All	ing L. 1867, ch. 518.	....	...	....	1915	356	307
1908	68	*All*	Improving streets and con-						
		All	structing drains in village of White Plains, Westchester county, amending L. 1906, ch. 80.	....	...	....	1915	356	307

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[1] Regulating the sale of building lots.

[2] New bridge across the Mohawk river and the Barge Canal.

The italicised matter following each chapter number indicates the part of such chapter treate private and local in its operation.

Statutes				Amended or otherwise affected by			Express	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	C
1908	69	*All*	System of sewerage and drain-					
		All	age in village of White Plains, amending L. 1887, ch. 609; L. 1903, ch. 428.				1915	3
1908	70	*All*	Village of White Plains to ap-					
		All	point assessor and prescribe manner of collecting tax, amending L. 1905, ch. 619.				1915	3
1908	71	*All*	Improvement of streets in vil-					
		All	lage of White Plains, Westchester county, amending L. 1899, ch. 353.				1915	3
1908	139	*All*	New York city to lease Ward's					
		1	Island to state	1913	696			
1908	149	*All*	Celebration of tercentenary of					
		4	discovery of Lake Champlain.	1910	44			
		4		1911	181			
		4		1912	273			
1908	163	*All*	City of Yonkers to refund cer-					
		All	tain bonds	1918	489[1]			
1908	195	*All*	Appraisal of lands, structures					
		2	and waters for use of im-	1910	334			
		2	proved canals, amending L.	1915	448			
		2	1903, ch. 147, and repealing	1917	729			
		2	L. 1904, ch. 335	1918	600			
		3		1910	334			
		3		1915	448			
		All		1913	708[2]			
		All		1915	570[3]			
1908	258	*All*	City of Rensselaer, amending					
		All	L. 1897, ch. 359				1913	4
1908	336	*All*	City of Buffalo, department of					
		All	public instruction, amending L. 1891, ch. 105.				1917	7
1908	337	*All*	City of Binghamton, municipal					
		All	bonds, amending L. 1907, ch. 751.				1917	6
1908	340	*All*	City of Newburgh, amending					
		All	L. 1907, ch. 203				1916	5
1908	369	*All*	City of Olean, amending L.					
		All	1893, ch. 478				1914	4
		All					1915	5
1908	406	*All*	School district number nine in					
		All	town of Pomfret, amending L. 1858, ch. 34.				1917	7
1908	418	*All*	Sessions and compensation of					
		2	board of supervisors of Oneida	1910	419			
		2	county	1917	191			
		2		1918	469			
1908	431	*All*	Municipal court of New York					
		All	city, amending L. 1902, ch. 580.				1915	2
1908	452	*All*	Charter city of Yonkers. [Pre-					
		Art. 3, § 1, subd. 40 (added)	vious charter, L. 1895, ch. 635.]	1913	87			

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[1] Bond issue to meet deficiency.

[2] Compensation for property appropriated.

[3] Bond issue for Erie, Oswego and Champlain canals.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1908	452	Art. 3, § 1, subd. 40		1915	114				
		Art. 4, § 1		1912	424				
		Art. 4, § 1		1917	166				
		Art. 5, § 2		1918	44				
		Art. 5, §§ 4, 6		1917	725				
		Art. 5, §§ 8, 9		....	...	....	1914	224	
		Art. 5, §§ 8, 9, 9a–9e (added)		1914	224				
		Art. 5, § 9e		1915	478				
		Art. 5, §§ 9f–9i (added)		1914	224				
		Art. 5, §§ 8, 9, 9a–9i		....	...	....	1917	725	3
		Art. 5, § 10 (renumbered 8)		1917	725				
		Art. 5, § 11 (renumbered 9)		1917	725				
		Art. 5, § 12 (renumbered 10)		1917	725	6			
		Art. 5, § 13		....	...	....	1917	725	
		Art. 5, §§ 14, 19–21		1912	424				
		Art. 5, §§ 14–20 (renumbered 11–17)		1917	725	8			
		Art. 5, § 21 (renumbered 18)		1917	725	9			
		Art. 5, §§ 22–24 (renumbered 19–21)		1917	725	10			
		Art. 5, § 25 (renumbered 22)		1917	725	11			
		Art. 5, § 26 (renumbered 23)		1917	725	12			
		Art. 5, § 27 (renumbered 24)		1917	725	13			
		Art. 5, § 28 (renumbered 25)		1917	725	14			
		Art. 5a, §§ 1–22 (added)		1917	725	15			
		Art. 6, §§ 5–8, 10–14, 17		1912	424				
		Art. 6, § 18		1916	85				
		Art. 8, §§ 8, 9		1918	313				
		Art. 9, §§ 1–5		....	...	....	1917	786	6
		Art. 9, § 6, subd. h		1909	365				
		Art. 9, §§ 6–10		....	...	....	1917	786	6
		Art. 9, § 11		1909	365				
		Art. 9, § 11		....	...	....	1917	786	6
		Art. 9, §§ 12–17, 20		....	...	....	1917	786	6
		All		1912	426[1]				
		All		1917	406[2]				
		All		1917	664[3]				
		All		1917	733[4]				
		All		1918	489[5]				
		All		1918	589[6]				
1908	454	*All*	Charter city of Oneonta. [Previous charter (village), L. 1885, ch. 30.]						
		2, 13		1914	340				
		14		1909	114				
		14		1914	340				
		34, 37		1917	454				
		39, 54, 57, 59, 62, 72		1914	340				
		75		1916	267				
		76		1914	340				
		78, ¶¶ 6, 8		1910	248				
		78, subd. 8		1917	454				
		78, subd. 9		1914	340				

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[1] Grant to city lands under water for extending sewer.

[2] Sewer through Saw Mill river and Harlem valleys.

[3] Part of city annexed to city of New York.

[4] Reinstate John Healy in police department.

[5] Bond issue to meet deficiency.

[6] Plans for marine terminal.

The italicised matter following each chapter number indicates the part of such chapter treated a private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly r by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1908	454	84		1914	340			
		Tit. 5a (§§ 87, 88) added		1914	340			
		150–166		....	...	....	1917	786
		190, 193, 194, 196		1917	454	3		
		210, 224		1914	340			
		All		1912	257[1]			
		All		1918	450[2]			
1908	467	*All*	State farm for women.					
		10a (added)		1915	373			
1908	481	*All*	Department of public instruc-					
		1	tion in city of Schenectady	1916	271			
		2		1916	488			
		All		....	...	....	1917	786
1908	495	*All*	Municipal court of New York					
		All	city, amending L. 1902, ch. 580.	....	...	....	1915	279
1908	503	*All*	Charter city of Ithaca. [Pre-					
		2, 3	vious charter, L. 1888, ch.	1914	294			
		6	212.]	1912	139			
		6		1915	572			
		20		1912	139			
		20a (added)		1912	139			
		25a (added)		1915	572			
		35, subd. 35		1917	425			
		44		1912	139			
		122		1915	572			
		128		1917	425			
		150		1917	425	3		
		154		1916	425			
		170–179		....	...	....	1917	786
		180		1912	438			
		180		....	...	....	1917	786
		181		1912	438			
		181		....	...	....	1917	786
		182–187		....	...	....	1917	786
		188, subd. 3		1912	438			
		188–194		....	...	....	1917	786
		195		1912	438			
		195–199		....	...	....	1917	786
1909	85	*All*	Common schools in city of					
		All	Utica, amending L. 1850, ch. 66.	....	...	....	1917	786
1909	115	*All*	City of Buffalo to construct and					
		2	maintain municipal hospital	1911	50			
		2	for treatment of incipient tuberculosis.	1912	138			
1909	125	*All*	City of Olean, territorial limits,					
		All	amending L. 1893, ch. 478	....	...	....	1914	436
		All		....	...	....	1915	535
1909	126	*All*	City of Olean, amending L.					
		All	1893, ch. 478	....	...	....	1914	436
		All		....	...	....	1915	535

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[1] Bond issue for paving streets legalized.

[2] Extra compensation for city chamberlain.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1909	135	*All* All	City of Binghamton, eligibility of city officers, amending L. 1907, ch. 751.	....	...	....	1917	668	340
1909	188	*All* All	Approving the Blauvelt site for field rifle range selected by armory commission.	1913	420[1]				
1909	191	*All* All	Village of White Plains, amending and in part repealing L. 1867, ch. 518; repealing L. 1899, ch. 255.	....	...	....	1915	356	307
1909	211	*All* All	Establishing Saint James' American Protestant Episcopal Church, Florence, Italy, by board of trustees in New York city.	1914	11[2]				
1909	255	*All* All	Commissioners of land office to adjust claim of Cayuga Nation of Indians.	1913	778[3]				
1909	295	*All* All	City of Buffalo to issue bonds.	1916	303[4]				
1909	361	*All* 1	Repaving streets in city of Mount Vernon	1912	159				
		1		1916	477				
1909	362	*All* All	City of Olean, amending L. 1893, ch. 478	....	...	....	1914	436	
		All		....	...	....	1915	535	136
1909	364	*All* All	Village of Canandaigua, amending L. 1893, ch. 666	....	...	....	1913	371	251
1909	365	*All* 2, 3	City of Yonkers, amending L. 1908, ch. 452	....	...	....	1917	786	6
1909	386	*All* All	Supplying village of White Plains with water, amending L. 1896, ch. 769.	....	...	....	1915	356	307
1909	390	*All* 6-8	Court house in Kings county.	1912	357				
		All		....	...	....	1914	218	9
1909	391	*All* All	Issuing bonds to not exceeding seven million dollars for improvement of Cayuga and Seneca canals, and submission to the people.	1912	9[5]				
		All		1912	116[6]				
		All		1912	209[7]				
		All		1912	320[8]				
		All		1913	365[9]				

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[1] Control of Blauvelt rifle range conferred upon Palisades Interstate Park Commissioners.
[2] Powers of trustees.
[3] Appropriation to pay annuities.
[4] Application of moneys collected from assessment for street improvement.
[5] Commission on Barge Canal operation.
[6] Appropriation to pay interest.
[7] Annual contribution to canal debt sinking fund.
[8] Appropriation for improvement.
[9] Reappropriation of money.

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly by	
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch**
1909	391	All		1913	515[1]			
		All		1913	708[2]			
		All		1913	804[3]			
		All		1913	805[4]			
		All		1914	525[5]			
		All		1915	585[6]			
		All		1915	640[7]			
		All		1916	642[8]			
		All		1915	691[9]			
		All		1915	692[9]			
		All		1915	729[10]			
		All		1918	28[11]			
		All		1918	153[12]			
		All		1918	351[13]			
		All		1918	353[14]			
		All		1918	368[14]			
		All		1918	606[15]			
1909	431	*All*	Public school teachers' retirement fund in Westchester county					
		1		1914	356			
		3		1911	23			
		3		1914	356			
		4		1911	23			
		4		1914	356			
1909	446	*All*	Management of Eastern New York State Custodial Asylum to be known hereafter as "Letchworth Village."					
		4		1916	118	32		
1909	453	*All*	Lift or hoist bridge over Erie canal in city of Syracuse					
		All		1912	497[16]			
1909	468	*All*	Municipal court in New York city, amending L. 1902, ch. 580.					
		All		....	...	....	1915	27
1909	538	*All*	Charter city of Dunkirk. [Previous charter, L. 1885, ch. 396.]					
		15		1910	143			
		15		1917	637			
		16		1910	143			
		16		1916	383			
		17 (added)		1910	143			

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[1] Appropriation to repair damage done by floods.
[2] Compensation for property appropriated.
[3] Direct tax for canal sinking fund.
[4] Appropriation to pay interest on debt.
[5] Appropriation for canal debt sinking fund.
[6] Transferring money to canal debt sinking fund.
[7] Time for filing claims extended.
[8] Payment of interest on Cayuga and Seneca canal bonds.
[9] Appropriation to pay interest.
[10] Annual contribution to canal debt sinking fund.
[11] Completion of improvement.
[12] Appropriating money.
[13] Bridge at Lake street, city of Geneva.
[14] Sinking fund.
[15] Time for filing existing claims.
[16] Money reappropriated for same purpose.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				**Amended or otherwise affected by**			**Expressly repealed by**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1909	538	17		1917	637				
		22, 102		1916	383				
		102		1917	447				
		149 (added)		1916	279				
		154, 160		1917	637				
		170		1916	294				
		170		1916	383				
		170		1918	124				
		171, 172		1916	383				
		174, 175 (added)		1917	637	4			
		199 (added)		1916	383				
		229		1918	205				
		All		1914	486[1]				
		All		1914	503[2]				
		All		1916	183[3]				
		All		1916	293[4]				
1909	541	*All*	Improvement of streets in village of Hoosick Falls, Rensselaer county						
		14		1912	184				
		16		1912	8				
1909	544	*All*	Sewage disposal works in town of Pelham, repealing L. 1908, ch. 504.						
		All		1916	113[5]				
1909	545	*All*	Charter village of Medina. [Previous charter, L. 1874, ch. 39.]						
		7, 11		1912	7				
		39, subd. 8		1915	514				
		45		1915	514				
		50		1912	7				
		74		....	...	....	1915	509	
		74 (added)		1915	509				
		75a (added)		1915	514				
		117		1915	514				
		194		1915	118				
1909	550	*All*	City of Glens Falls, amending L. 1908, ch. 29						
		24, 25		....	...	....	1917	786	6
1909	568	*All*	Granting to New York city certain lands under water in Jamaica bay and vicinity.						
		All		1912	522[6]				
1909	569	*All*	Appropriation of certain lands in town of Saratoga Springs for state reservation, and preserving natural mineral springs therein						
		1		....	...	....	1916	295	
		2		1911	394				
		2		....	...	....	1916	295	
		3		1911	469				
		3		1914	252				
		3		....	...	....	1916	295	
		4, 5		1911	394				
		4, 5		....	...	....	1916	295	
		All		1912	42[7]				

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[1] Lands under water conveyed to city.
[2] Bond issue for new public school building in Fourth ward.
[3] Bond issue to pay for sewer and paving.
[4] Bond issue for school building in First ward.
[5] Board of sewage disposal works abolished.
[6] Jamaica bay harbor.
[7] Appropriation of revenues.

The italicized matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly b	
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**C**
1909	569	All		1912	111[1]			
		All		1913	435[2]			
		All		1915	686[3]			
		All		1915	687[4]			
		All		1916	296[5]			
		All		1917	763[4]			
		All		1918	354[4]			
1909	570	*All*	City Court of Buffalo, repealing in part L. 1891, ch. 105; repealing L. 1908, ch. 387					
		5		1914	45			
		9a (added)		1917	337			
		10		1913	585			
		10		1918	492			
		10		1917	477			
		20, subd. 10		1913	157			
		23		1917	477	2		
		23a (added)		1917	477	3		
		24, 26		1917	477	4		
		34, 35		1917	477	4		
		40		1915	188			
		41		1913	580			
		49		1917	477	4		
		51		1910	339			
		51		1913	118			
		52		1913	601			
		53		1913	157			
		54		1915	188			
		54a (added)		1915	188			
		55		1913	581			
		55		1916	428			
		56		1915	188			
		57 (added)		1913	309			
		72		1917	477	4		
		74		1913	601			
1909	574	*All*	Charter city of Lackawanna.					
		10		1914	431			
		13		1910	490			
		13		1914	431			
		16		1912	355			
		33, 36, 38, 62, subd. 9		1917	422			
		83		1910	293			
		83		1917	422			
		86		1912	355			
		122, 124, 125, 127		1914	431			
		150, 151		1910	491			
		150, 151		....	...	....	1917	7
		152		....	...	....	1917	7
		153		1910	491			
		153		....	...	....	1917	7

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[1] Appropriation for principal and interest on debt.
[2] Appropriation for commissioners and for additional property.
[3] Appropriation for interest.
[4] Appropriation for principal and interest.
[5] Appropriation.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1909	574	162		1917	422				
		197		1912	129				
		282		1917	422				
		All		1912	188[1]				
		All		1914	219[2]				
		All		1917	688[3]				
1909	583	*All*	Several towns in Suffolk county						
		1, 4	to establish police district	1918	131				
		7		....	...	....	1918	131	3
		8		1910	294				
		8		1918	131				
		10, 14		....	...	....	1918	131	5
		12, 15		1918	131				
		16		....	...	....	1918	131	8
1909	591	*All*	Public schools in city of Auburn,						
		All	amending L. 1875, ch. 577	....	...	....	1917	786	6
1909	592	*All*	Construction of new buildings						
		4	for Oswego Normal and	1912	487				
			Training School.						
1910	3	*All*	Village of Norwich, Chenango						
		All	county, maintaining streets,	....	...	....	1914	34	367
			sidewalks, public parks,						
			bridges, culverts and water-						
			ways, amending L. 1904, ch. 7.						
1910	13	*All*	Power house, coal pockets and						
		All	conduits for furnishing heat,	1912	517[4]				
			light and power to state cap-						
			itol and education building.						
1910	26	*All*	Commission for government and						
		1	control of municipal hospital	1910	405				
		1, 2	for city of Buffalo for care	1912	553				
			and treatment of tubercu-						
			losis.						
1910	37	*All*	City of Binghamton, frontage						
		All	tax for construction of sew-	....	...	....	1917	668	340
			ers, amending L. 1907, ch. 751.						
1910	49	*All*	City of Mount Vernon, free						
		All	public library, amending L.	....	...	....	1917	786	6
			1892, ch. 182.						
1910	66	*All*	Barge Canal bonds.						
		2		1912	186				
		All		1913	787[5]				
		All		1915	729[6]				
		All		1916	642[7]				
		All		1918	353[8]				
		All		1918	368[9]				

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[1] Ridge road improvement bonds.

[2] Acts and proceedings in paving certain streets legalized.

[3] Bond issue for school site and buildings legalized.

[4] Appropriation.

[5] Rate of interest.

[6] Annual contribution to sinking fund.

[7] Payment of interest on Erie, Champlain and Oswego canal bonds.

[8] Appropriation for payment of interest.

[9] Annual contribution.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1910	67	*All*	City of Binghamton, appointment of stenographer by corporation counsel, amending L. 1907, ch. 751.						
		All		....	...	....	1917	668	340
1910	74	*All*	City of Newburgh, city funds for band concerts, amending L. 1907, ch. 203.						
		All		....	...	....	1916	575	198
1910	75	*All*	City of Mount Vernon to erect municipal building						
		1		1913	97				
1910	97	*All*	City of Binghamton, compensation of city clerk, amending L. 1907, ch. 751.						
		All		....	...	....	1917	668	340
1910	101	*All*	City of Cohoes, amending L. 1892, ch. 671						
		All		....	...	....	1917	786	6
1910	139	*All*	Cayuga and Seneca canal bonds authorized by L. 1909, ch. 391.						
		All		1913	787[1]				
		All		1915	585[2]				
		All		1915	729[3]				
		All		1916	642[4]				
		All		1918	353[5]				
		All		1918	368[6]				
1910	153	*All*	Municipal court of New York city, adjournments, amending L. 1902, ch. 580.						
		All		....	...	....	1915	279	184
1910	162	*All*	Municipal commission of village of Herkimer, Herkimer county, repealing L. 1887, ch. 485; L. 1891, ch. 58; L. 1893, ch. 463; L. 1895, ch. 110; L. 1907, ch. 36						
		7, 8		1917	250				
		9, subd. 4 (added)		1915	20				
		9, 11, 12, 13		1917	250				
1910	199	*All*	Mapping of certain canal lands and lands adjacent thereto						
		1, 2		1917	51				
		3 (added)		1917	51				
		3 (renumbered 4)		1917	51				
		4, 5 (renumbered 5, 6)		1917	51				
		All		1912	511[7]				
		All		1913	290[7]				
		All		1914	523[7]				
		All		1918	1[8]				
1910	209	*All*	Appropriation for highway improvement purposes						
		All		1912	496[9]				
1910	218	*All*	City of Newburgh, police force, amending L. 1907, ch. 203						
		All		....	...	....	1916	575	198

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[1] Rate of interest upon bonds.
[2] Transferring money to canal debt sinking fund.
[3] Annual contributions to canal debt sinking fund.
[4] Payment of interest on Cayuga and Seneca canal bonds.
[5] Appropriation for interest
[6] Sinking fund.
[7] Continuance of work authorized.
[8] Canal land in town of Stillwater conveyed to United States.
[9] Money reappropriated for same purpose.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1910	276	*All*.....	Method, terms and conditions under which shall be determined amount of any debt incurred by New York city for any rapid transit or dock investment.						
		9[1].....		....	...	....	1912	440	11
1910	343	*All*.....	Ceding to town of Smithtown, Suffolk county, land adjacent to such town between high and low water mark, for protection of clamming.						
		All......		....	...	....	1914	442	
1910	363	*All*.....	Bonds not exceeding two million five hundred thousand dollars for use of Commissioners of Palisades Interstate Park						
		All......		1912	114[2]				
		All......		1912	209[3]				
		All......		1913	804[4]				
		All......		1913	807[5]				
		All......		1914	271[6]				
		All......		1915	265[7]				
		All......		1915	685[2]				
		All......		1915	729[8]				
		All......		1916	642[9]				
		All......		1918	353[10]				
		All......		1918	368[2]				
1910	365	*All*.....	Commission on new prisons to select and purchase another site for new state prison to take place of Sing Sing.						
		All......		....	...	....	1916	594	8
1910	391	*All*.....	Common schools in city of Lockport, amending L. 1847, ch. 51.						
		All......		....	...	....	1917	786	6
1910	401	*All*.....	Municipal court of New York city, amending L. 1902, ch. 580.						
		All......		....	...	....	1915	279	184
1910	459	*All*.....	New York Interstate Bridge Commission						
		1.......		1913	189[11]				
1910	460	*All*.....	City of Binghamton, duties and powers of police captains, amending L. 1907, ch. 751.						
		All......		....	...	....	1917	668	340
1910	465	*All*.....	Permitting city of Poughkeepsie to maintain tuberculosis hospital and Dutchess county to make appropriation therefor.						
		1, 2.....		1914	426				
		3.......		1914	426				
		3.......		1918	363				
1910	464	*All*.....	Public schools in city of Elmira, amending L. 1895, ch. 370...						
		All......		....	...	....	1917	786	6

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[1] As far as relating to debts incurred since January 1, 1910.

[2] Appropriation for interest.

[3] Sinking fund.

[4] Direct tax for debt sinking fund.

[5] Appropriation to pay interest on debt.

[6] Appropriation.

[7] Unexpended balance reappropriated.

[8] Annual contribution to sinking fund.

[9] Payment of interest.

[10] Appropriation to pay interest.

[11] Name changed to "New York State Bridge and Tunnel Commission."

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1910	466	*All*	Common schools in village of Lockport, election of trustees, amending L. 1847, ch. 51.						
		All					1917	786	6
1910	491	*All*	City of Lackawanna, school districts and officers, amending L. 1909, ch. 574.						
		1, part amending §§ 152, 153					1917	786	6
1910	513	*All*	Appropriations for expenses of government						
		All		1912	497[1]				
1910	518	*All*	Improvement of Oriskany creek feeder, in town of Kirkland, Oneida county.						
		All		1912	497[2]				
1910	520	*All*	New buildings for Buffalo State Normal and Training School.						
		All		1912	14[3]				
		All		1913	186[3]				
1910	524	*All*	Improvement of weigh-lock building in city of Syracuse						
		All		1912	497[2]				
1910	532	*All*	Appropriation for highway improvement in expediting building of stone road from New York to Buffalo.						
		All		1913	360[4]				
1910	538	*All*	Municipal court of New York city, jurisdiction, practice and procedure, amending L. 1902, ch. 580.						
		All					1915	279	184
1910	539	*All*	Municipal court of New York city, amending L. 1902, ch. 580.						
		All					1915	279	184
1910	540	*All*	Municipal court of New York city, amending L. 1902, ch. 580.						
		All					1915	279	184
1910	541	*All*	Municipal court of New York city, amending L. 1902, ch. 580.						
		All					1915	279	184
1910	542	*All*	Municipal court of New York city, actions on certain contracts, amending L. 1902, ch. 580.						
		All					1915	279	184
1910	559	*All*	Charter city of New Rochelle. [Previous charter, L. 1899, ch. 128.]						
		12		1913	225				
		57					1915	520	
		57 (added)		1915	520				
		119, 121		1918	486				
		122 (added)		1917	73				
		165		1914	338				
		167 (added)		1915	520				
		171, 172					1915	520	
		173		1914	338				
		173–178					1915	520	
		193, 196		1914	433				
		225–228 (added)		1914	433				

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[1] Reappropriation for Moyer creek improvement.
[2] Money reappropriated for same purpose.
[3] Appropriations.
[4] Reappropriating unexpended balance.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1910	559	271-273		1913	225				
		281, 286, 287		1915	520				
		351-365		....	...	....	1917	786	6
1910	564	*All*	County roads in certain counties adjoining cities of first class						
		Title		1911	254				
		1		1911	254				
		1		1918	295				
		2		1918	295				
		4 (added)		1913	473				
		4 (renumbered 5)		1913	473				
1910	565	*All*	Town board and superintendent of highways of town of Wales, Erie county, to cancel assessments for improvement of Big Tree road.						
		All		....	...	....	1913	78	
1910	586	*All*	Hospital commission for city of Yonkers and care of persons suffering from tuberculosis in advanced stages						
		3, 4, 5		1917	445				
1910	592	*All*	Care and investment of Adam Haverling school fund, belonging to Haverling union free school district number five, town of Bath, Steuben county, repealing L. 1876, ch. 290; L. 1895, ch. 785, tit. 7, §§ 1, 2.						
		2		1913	191				
1910	596	*All*	City of Rensselaer, bond of treasurer, amending L. 1897, ch. 359.						
		All		....	...	....	1913	481	435
1910	597	*All*	City of Rensselaer, special tax election for school purposes, amending L. 1897, ch. 359.						
		All		....	...	....	1913	481	435
1910	603	*All*	City court of Albany.						
		All		1914	368[1]				
1910	632	*All*	City of Poughkeepsie, amending and in part repealing L. 1896, ch. 425.						
		93-99		....	...	....	1917	786	6
1910	635	*All*	Sale of part of armory site in city of Olean						
		1		1915	199	1			
1910	659	*All*	Inferior courts of criminal jurisdiction in New York city, repealing in part L. 1901, ch. 466						
		3, 10, 14		1915	531	1-3			
		16a (added)		1915	531	4			
		31, subd. 3		1918	517				
		31, subd. 5 (added)		1913	679				
		34		1915	531	5			
		34a-34t (added)		1915	531	6			
		35		....	...	....	1915	531	39
		39a (added)		1913	691				
		42		1915	531	7			
		Art. 3a, §§ 43-46 (added)		1915	531	8			
		Art. 4, synopsis		1915	531	9			
		50, 51		1915	531	10, 11			
		52		1912	464				

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[1] City Court Act generally revised and amended.

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly b	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	C
1910	659	52		1913	372			
		53		....	...	....	1915	5
		54, 55		1915	531	12, 13		
		55a–55c (added)		1915	531	14		
		56, 57, 59		1915	531	15–17		
		60		1913	372			
		60		1915	531			
		61		....	...	....	1915	5
		70		1915	531	19		
		71		1912	469			
		72		1913	372			
		72		1915	531			
		72a (added)		1912	467			
		72a		1913	372			
		72a, 73		1915	531			
		74		1911	881			
		74		1913	689			
		74		1914	464			
		74		1915	53	23		
		75		1913	372			
		75a (added)		1913	372			
		76		1915	531	24		
		77		1911	510			
		77		1913	372			
		77		1914	447			
		77		1915	531	25		
		77		1918	419			
		77a (added)		1918	418	25		
		78		1913	372			
		81		1915	531			
		82		1913	372			
		83		1914	452			
		84		1913	372			
		88		1913	372			
		88, subd. 3		1914	454			
		88, subd. 3		1917	219	1		
		88, subd. 4		1914	454			
		88, subd. 4		1917	603			
		88, subd. 5		1914	454			
		88, subd. 7 (added)		1914	305			
		88a (added)		1913	372			
		89		1912	460			
		89		1913	372			
		89, subd. 4		1914	454			
		90		1913	372			
		91		....	...	....	1913	3
		92		1913	372			
		92		1915	531	27		
		92 (added)		1913	372			
		94		1915	531	28		
		95		....	...	....	1915	5
		Art. 5a, §§ 95a–95c (added)		1915	531	29		
		96, 97		1915	531	30, 31		
		98		1918	516			
		98a (added)		1913	372			
		98a, 102		1915	531	32, 33		

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1910	659	103		1911	720				
		103		1915	531	34			
		104–106, 114		1915	531	35–38			
		115		1917	399	1			
		116 (added)		1917	399	2			
1910	667	*All*	Charter village of Ossining. [Previous charter, L. 1906, ch. 242.]						
		31, subd. 1		1917	86				
		59		1914	65				
		114		1912	24				
		126		1914	208				
		126		1917	135				
		133		1913	123				
		133		1914	208				
		135		....	...	....	1914	208	3
		136 (renumbered § 135)		1914	208	3			
		All		1914	158[1]				
		All		1915	507[2]				
		All		1916	37[3]				
		All		1916	211[3]				
		All		1917	82[4]				
		All		1917	141[5]				
		All		1918	396[6]				
		All		1918	436[7]				
1910	676	*All*	Establishing court of special sessions of city of Syracuse, repealing in part L. 1885, ch. 26.]						
		1, 2		1916	487				
		4		1914	221				
		4a (added)		1914	221				
		4a		1916	487				
		4a		....	...	....	1918	37	
		4a (added)		1918	37				
		20a (added)		1917	112				
		24, 30		1916	487				
1910	682	*All*	Care of records, documents, books, maps and papers deposited, filed or recorded in office of register of New York county.						
		1		1912	220				
1911	19	*All*	Installing elevator in armory in Elmira.						
		All		1912	495[8]				
1911	73	*All*	Municipal court of New York city, pleadings, amending L. 1902, ch. 580.						
		All		....	...	....	1915	279	184
1911	76	*All*	City of Buffalo to acquire lands for system of water works, amending L. 1903, ch. 240						
		All		....	...	....	1912	381	8
1911	77	*All*	City of Mount Vernon, annual budget of board of education, amending L. 1892, ch. 182.						
		All		....	...	....	1917	786	6

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[1] Taxes and assessments.
[2] Land for housing fire apparatus.
[3] Bond issue to pay floating indebtedness.
[4] Bond issue to refund outstanding bonds.
[5] Expense of sewer system reapportioned.
[6] Bond issue for funding notes.
[7] Reapportionment of expense of sewer system.
[8] Reappropriation of money appropriated.

The italicised matter following each chapter number indicates the part of such chapter treated a private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly r by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1911	92	*All*	Appropriation for highway improvement from point on route four, at dividing line between Broome and Tioga counties.					
		All		1913	362[1]			
		All		1915	682[1]			
		All		1917	277[1]			
1911	127	*All*	Supply of water for city of Mount Vernon					
		15, 16		1912	478			
1911	132	*All*	Improvements in channel and banks of Mohawk river and West Canada creek.					
		3a (added)		1913	245			
1911	133	*All*	Appropriation for highway improvement in expediting building of certain state routes.					
		All		1913	362[2]			
		All		1913	786[3]			
		All		1913	362[1]			
		All		1915	682[1]			
		All		1917	277[1]			
1911	134	*All*	Appropriation for highway improvement in expediting building parts of state routes twenty-two and twenty-five					
		All		1913	362[1]			
		All		1915	682[1]			
		All		1917	277[1]			
1911	135	*All*	Appropriation for highway improvement for purpose of completing stone road from Albany to Binghamton					
		All		1913	362[1]			
		All		1915	682[1]			
		All		1917	277[1]			
1911	136	*All*	Appropriation for highway improvement in expediting building of certain portions of route number four of state highway system.					
		All		1913	362[1]			
		All		1915	682[1]			
		All		1917	277[1]			
1911	137	*All*	Authorizing Franklin county to construct and maintain county road system					
		3		1913	58			
		5		1913	58			
		All		1918	157	3[4]		
1911	154	*All*	Appropriation for highway improvement in expediting building of certain state routes.					
		2		1912	325			
		All		1914	275[5]			
1911	155	*All*	Appropriation for highway improvement in expediting building of certain state route					
		All		1913	362[1]			
		All		1915	682[1]			
		All		1917	277[1]			
1911	184	*All*	Charter city of Watervliet. [Previous charter, L. 1896, ch. 905; subsequent charter, L. 1918, ch. 462.]					
		8		1915	675	1		
		17		1912	423	1		
		17		1917	444			
		17, so much as relates to salary of superintendent of school		....	...	....	1917	78
		80		1917	444	2		
		115		1915	675	1		

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[1] Reappropriated.

[2] Reappropriation of money.

[3] Reappropriation for new state routes in Essex and Warren counties.

[4] Appropriation.

[5] Reappropriating money for new state routes in counties of Niagara and Orleans.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1911	184	165–184		....	...	....	1917	786	6
		202		1915	675	1			
		275–279		....	...	....	1916	286	
		275, 276 (added)		1916	286				
		All		....	...	....	1918	462	206
		All		1914	428[1]				
1911	187	*All*	City of Middletown, amending L. 1902, ch. 572						
		7, 8		....	...	....	1917	786	6
1911	236	*All*	Incorporating superintendents of Eel Weir park of town of Oswegatchie.						
		2, 5		1917	278				
1911	214	*All*	Appropriation for improvement of canals						
		All		1913	365[2]				
1911	227	*All*	Expediting work of improving Oswego canal by suspension of navigation during portion of season of nineteen hundred and eleven.						
		All		1912	282[3]				
1911	242	*All*	Charter city of Amsterdam. [Previous charter, L. 1885, ch. 131.]						
		8		1918	169				
		36		1918	169				
		48, 57		1917	310				
		110		1916	78				
		110		1918	169				
		116–129		....	...	....	1917	786	1
		All		1912	135[4]				
		All		1916	206[5]				
		All		1918	40[6]				
		All		1918	41[7]				
1911	288	*All*	Court of general sessions of New York county						
		1		1917	347				
1911	289	*All*	Extending corporate existence of Enterprise Land Company, and to validate its conveyance of real estate and election of trustees.						
		1		1913	655				
1911	297	*All*	Incorporating Carnegie Corporation of New York						
		All		1917	246[8]				
1911	306	*All*	Board of Trustees of village of White Plains to acquire lands for public library and to maintain a public library and issue bonds therefor, amending L. 1905, ch. 148.						
		All		....	...	....	1915	356	307
1911	337	*All*	City of Binghamton, taxpayers' election, amending L. 1907, ch. 751.						
		All		....	...	....	1917	668	340

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[1] Water department established.

[2] Reappropriation.

[3] Work suspended during season of 1912.

[4] Bond issue for liquidating floating indebtedness and deficiency.

[5] Bond issue for paving Guy Park avenue.

[6] Bond issue of fire house.

[7] Bond issue for extension of water system.

[8] Enlargement of powers.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1911	340	.... 2.......	City of Rochester, public library, amending L. 1907, ch. 755.	....	...	....	1917	786	6
1911	348	*All*..... All...... All...... All......	Appropriation for highway improvement in expediting building of portion of state route four.................	1913 1915 1917	362[1] 682[1] 277[1]				
1911	355	*All*..... All......	Authorizing board of trustees of public buildings to contract for site, construction and equipment of power house, coal pockets and conduits for furnishing heat, light and power to state capitol and education building.	1912	517[2]				
1911	360	*All*..... 6a (added)	Health and efficiency of policemen in cities of first and second class.	1914	456				
1911	361	*All*..... All......	Sanitary trunk sewer and sanitary outlet sewer in Westchester county, amending L. 1905, ch. 646.	1913	417[3]				
1911	380	.... All......	Creating the office of supervisor of public records and transferring said office and office of State Historian to the education department.	....	...	....	1913	424	2
1911	386	*All*..... All......	City of Buffalo, examinations and grade certificates for assistant teachers, amending L. 1891, ch. 105.	....	...	....	1917	786	6
1911	394	*All*..... 1–3, 5...	State reservation in town of Saratoga Springs, amending L. 1909, ch. 569.	....	...	....	1916	295	
1911	400	*All*..... 1.......	Reconstruction of old portion of Potsdam State Normal School.	1915	389				
1911	422	*All*..... All......	Public schools of city of Auburn, amending L. 1875, ch. 577.	....	...	....	1917	786	6
1911	426	*All*..... All...... All...... All......	Appropriation for highway improvement in expediting building of portions of state route number five...........	1913 1915 1917	362[1] 682[1] 277[1]				
1911	442	*All*..... All......	Authorizing city of Buffalo to carry out and perform terms and conditions of certain contracts relating to sea wall strip and Hamburg turnpike, and public grounds and streets adjacent thereto, amending L. 1891, ch. 105.	1913	616[4]				

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[1] Reappropriated. [2] Appropriation.

[3] Term of office of commissioners extended.

[4] Conveyance of lands under water to owners of adjacent uplands in sea wall and Hamburg turnpike contracts.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1911	499	*All*	Charter village of LeRoy. [Previous charter, L. 1857, ch. 251.]						
		All		1916	30[1]				
1911	459	*All*	Legalizing proceedings of inhabitants of school district number six of town of West Seneca, Erie county, in issuance and sale of bonds.						
		Title		1912	41				
		1-3		1912	41				
1911	463	*All*	Appropriation for highway improvement in expediting building of certain state routes						
		All		1913	362[2]				
		All		1915	682[2]				
		All		1917	277[2]				
1911	467	*All*	Appropriation for highway improvement in completing portions of route number one						
		All		1913	362[2]				
		All		1915	682[2]				
		All		1917	277[2]				
1911	496	*All*	Appropriation for highway improvement in expediting building of certain state routes						
		All		1913	362[2]				
		All		1915	682[2]				
		All		1917	277[2]				
1911	518	*All*	Ceding certain land to village of Portchester, and authorizing the said village to lay out one or more highways thereon.						
		1		1914	23				
		4a (added)		1915	24				
1911	522	*All*	Public schools in city of Elmira, levying and collection of school moneys, amending L. 1895, ch. 370.						
		All		....	...	....	1917	786	6
1911	523	*All*	Extending the time of Frontier Electric Railway Company to finish construction of its railroad.						
		All		1914	411[3]				
1911	537	*All*	City of Newburgh, appropriations for specific purposes, amending L. 1907, ch. 203.						
		All		....	...	....	1916	575	198
1911	538	*All*	City of Newburgh, recorder, amending L. 1907, ch. 203						
		All		....	...	....	1916	575	198
1911	559	*All*	Appropriation for highway improvement in expediting building of portion of state routes four, fourteen and fifteen.						
		All		1912	473[4]				
		All		1913	362[2]				
		All		1915	682[2]				
		All		1917	277[2]				
1911	561	*All*	Commission to investigate conditions under which manufacture is carried on in cities of first and second class						
		3		1912	21				
		All		1913	137[5]				
		All		1914	110[5]				
1911	614	2	Appropriation for construction of portions of state highway routes forty-two, twenty-one and twenty-two						
		All		1913	362[2]				
		All		1915	682[2]				
		All		1917	277[2]				

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[1] Legalizing bond issue for water works.

[2] Reappropriated.

[3] Time for construction of railroad extended three years.

[4] Money available for Route No. 15.

[5] Commission continued.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1911	617	*All*	City of Kingston, amending L. 1896, ch. 747						
		32–34					1917	786	6
1911	639	*All*	Management of New York State Training School for Boys, and control of inmates.						
		All					1918	543	6
1911	645	*All*	City of Niagara Falls, amending L. 1904, ch. 300						
		19, 20					1917	786	6
1911	648	*All*	Charter of city of Oneida. [Previous charter, L. 1901, ch. 225.]						
		10, 11, 13		1916	63				
		14		1916	63				
		14		1917	102				
		14		1918	259				
		15, 18, 20, 31		1916	63				
		33		1917	102				
		36, 44		1916	63				
		44, subd. 7					1917	786	6
		47, subd. 29		1917	102				
		48		1917	102				
		60, 61, 70, 72		1916	63				
		Title 7, schedule of sections		1914	435				
		80, 81		1916	63				
		82		1914	435				
		82a–82k (added)		1914	435				
		83–94		1916	63				
		101		1913	67				
		101		1916	63				
		102, 103, 108		1916	63				
		110 (added)		1916	63				
		Tit. 9 (§§ 120–128)		1916	63				
		130, 131, 134–136, 138, 143, 145–147, 150, 154		1916	63				
		Tit. 12 (§§ 160, 164–166)		1916	63	7			
		236 (added)		1913	174				
		236					1916	63	8
		240–256					1917	786	6
1911	657	*All*	Appropriation for highway improvement in expediting building of certain state routes in Westchester county.						
		All		1913	362[1]				
		All		1915	682[1]				
		All		1917	277[1]				
1911	666	*All*	Police pension fund in village of White Plains.						
		2, subd. 8 (added)		1913	661				
		All					1915	356	307
1911	699		City of Middletown, amending L. 1902, ch. 572						
		36–38					1917	786	6
1911	713	*All*	Village of White Plains, amending L. 1867, ch. 518						
		All					1915	356	307
1911	715	*All*	Appropriation to expedite building of certain routes in state highway system						
		All		1913	362[1]				
		All		1915	682[1]				
		All		1917	277[1]				

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[1] Reappropriated.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1911	719	*All*.....	Regulation and improvement of the railroad terminals and approaches thereto, of the New York Central and Hudson River Railroad Company in city of New York.						
		7.......		1917	719				
		15a (added)		1917	719				
1911	733	*All*.....	Appropriation to expedite building of certain portions of state route number four[2]..........						
		All.....		1913	362[1]				
		All.....		1915	682[1]				
		All.....		1917	277[1]				
1911	735	*All*.....	Village of Peekskill to vote upon proposition for building for jail, police court and police headquarters.						
		All.....		....	...	....	1913	336	
1911	737	*All*.....	Board of assessors of New York city to estimate and allow damages sustained by owners of real property fronting upon streets approaching Manhattan bridge over East river...						
		1.......		1913	577				
		1.......		1915	595				
1911	741	*All*.....	Appropriation for highway improvement in expediting building of state route number thirty-three and certain portions of state routes twenty-seven, twenty-eight and thirty.						
		1.......		1912	439				
1911	742	*All*.....	Appropriation for highway improvement in expediting building of state route number three of state highway system, extending through Greene county.						
		All.....		1913	362[1]				
		All.....		1915	682[1]				
		All.....		1917	277[1]				
1911	743	*All*.....	Appropriation for highway improvement in expediting building of state route number thirty-four[2].............						
		All.....		1913	362[1]				
		All.....		1915	682[1]				
		All.....		1917	277[1]				
1911	746	*All*.....	Provision for issuing bonds not to exceed nineteen million, eight hundred thousand dollars for terminals and facilities for Barge Canal traffic, and providing for submission of the same to be voted upon at general election in year nineteen hundred and eleven.						
		8a (added)		1915	488	1			
		All.....	....	1912	9[3]				
		All.....	....	1912	113[4]				
		All.....	....	1912	209[5]				

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[1] Reappropriated.

[2] See L. 1906, ch. 469.

[3] Commission on Barge Canal operation.

[4] Appropriation for interest on Barge Canal debt.

[5] Annual contribution for Barge Canal terminals.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1911	746	All		1912	322[1]				
		All		1913	358[2]				
		All		1913	708[3]				
		All		1913	787[4]				
		All		1913	804[5]				
		All		1913	806[6]				
		All		1914	178[7]				
		All		1914	412	2[8]			
		All		1915	640[9]				
		All		1915	694[10]				
		All		1915	697[10]				
		All		1915	729[11]				
		All		1916	642[12]				
		All		1916	646[7]				
		All		1917	642[13]				
		All		1918	185[14]				
		All		1918	340[7]				
		All		1918	353[15]				
		All		1918	368[16]				
		All		1918	555[17]				
		All		1918	592[18]				
		All		1918	606[19]				
		All		1918	612[20]				
1911	750	*All*	Appropriation for highway improvement purposes[1]						
		All		1913	359[21]				
1911	760	*All*	Authorization of acquiring another site for Utica State Hospital, and disposition of present buildings and grounds.						
		All		1912	48[22]				
1911	776	*All*	Improving water front facilities of New York city, receipt, delivery and shipment of freight.						
		2, subds. (d), (e), (f), (g), (i), (j), (l)		1913	521				

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[1] Appropriation for terminals and facilities.
[2] Unexpended balance reappropriated.
[3] Compensation for property appropriated.
[4] Rate of interest upon bonds.
[5] Direct tax for Barge Canal terminal sinking fund.
[6] Payment of interest on debt.
[7] Reappropriation for terminals and facilities.
[8] Terminal facilities to village of Schuylerville.
[9] Time for filing claims extended.
[10] Appropriation to pay interest.
[11] Annual contribution to sinking fund.
[12] Payment of interest on Barge Canal terminal bonds.
[13] Rights and easements conveyed to city of New York, for subway purposes.
[14] Appropriation.
[15] Appropriation for interest.
[16] Sinking fund.
[17] Terminals at certain places on Hudson river.
[18] Appropriation to supplement facilities.
[19] Time for filing claims.
[20] Court of Claims to determine damages.
[21] Reappropriating unexpended balance.
[22] Appropriation for new site.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1911	776	4, 5		1913	521				
		6 (renumbered 8c)		1913	521				
		6 (added)		1913	521				
		7		1913	521				
		8 (renumbered 8d)		1913	521				
		8, 8a, 8b (added)		1913	521				
		8b		1915	723				
		All		1912	427[1]				
1911	777	*All*	Regulation and improvement of railroad terminals and approaches thereto, and motive power to be used thereon, of the New York Central and Hudson River Railroad Company in New York city.						
		7		1917	719				
		15a (added)		1917	719				
		All		1917	720[2]				
1911	779	*All*	Establishing a state athletic commission and regulating boxing and sparring in the state of New York.						
		1, 2, 9		1915	680				
		All		....	...	....	1917	555	1
1911	787	*All*	Establish commission to inquire into prices, purity, production and consumption of food and food stuffs, farm and dairy produce in state of New York, and making an appropriation therefor.						
		3		1912	177				
1911	822	*All*	Appropriations for state institutions reporting to fiscal supervisors of state charities.						
		1		1913	604	1			
1911	842	*All*	Railway terminal station commission of city of Buffalo						
		1, 3, 10, 11		1916	519	1–4			
1911	846	*All*	Retirement of justices of municipal court of New York city, their appointment as official referees.						
		1		1913	724	1			
1911	851	*All*	State College of Forestry at Syracuse University						
		2, subd. 1		1913	161				
		2		1918	42				
		3		1912	15				
		3		1913	339				
		3		1915	587				
		4		1916	118				
		4		1918	42				
		6		1912	15				
		All		1913	677[3]				
1911	853	*All*	Reconstruction and decoration of state capitol, constructon, equipment and decorations of state education building, and construction and equipment of capitol power house..						
		All		1912	517[4]				

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[1] Market property in Ninth ward assigned to department of docks.
[2] Commission to investigate.
[3] Appropriation and control of land and buildings.
[4] Appropriations.

The italicized matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressl	
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**C**
1911	855	*All*	Justices of the Appellate Division of the Supreme Court in the First Department to retire employees for incapacity, and providing for their compensation					
		1		1912	486			
		1		1913	138			
		1		1914	497			
		1		1916	480			
		2 (added)		1913	138			
		2		1914	497			
		2		1916	480			
1911	870	*All*	Charter city of Lockport. [Previous charter, L. 1886, ch. 120.]					
		63a (added)		1917	392			
		69		1912	416			
		102		1918	452			
		105, subds. 3, 4		1918	452			
		113		1916	432			
		113		1918	455			
		125, 131		1916	433			
		131a–131d (added)		1916	433			
		132, 133, 149		1916	433			
		235		1918	452			
		281		1912	416			
		All		1912	431[1]			
		All		1914	423[2]			
		All		1915	163[3]			
		All		1915	715[4]			
		All		1916	429[5]			
		All		1916	430[6]			
		All		1917	393[7]			
		All		1917	402[8]			
		All		1918	451[9]			
1911	876	*All*	Constituting poor district number one, Orange county, ratifying and confirming certain acts of board of supervisors and other officers.					
		2		1913	407	1		
1911	890	*All*	Dividing the state into congressional districts.					
		1, portions describing districts 3–8		1917	797			
		1, portions describing districts 3–8		1918	34			
		1, portion describing district 9		1915	340			
		1, portion describing district 9		1915	410			
		1, portion describing district 9		1917	797			
		1, portion describing district 10		1915	340			
		1, portion describing district 10		1917	797			
		1, portions describing districts 15–18, 21–23		1917	799			
		portions describing districts 41, 42		1918	250			

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[1] Bond issue for improvements to union school building.
[2] Legalizing bond issue for school improvements.
[3] Bond issue.
[4] Appropriation to pay paving assessment against state.
[5] Creating a firemen's pension fund.
[6] Legalizing sale of a portion of a street to Niagara Textile Company.
[7] Sell surplus waters to Niagara County Tuberculosis Hospital.
[8] School equipment bonds legalized.
[9] Bond issue for water-works system.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1911	898	*All*	Sale of state arsenal lands and building in the city of New York, and application of proceeds						
		1		1918	636				
		2, 3		1912	387				
		2, 3		1918	636				
		4, 5		1918	636				
1911	901	*All*	Appropriation for re-establishment of state library						
		All		1912	521[1]				
1912	3	*All*	Appropriations for certain immediate expenses of the Legislature and providing for deficiencies in former appropriations.						
1912	5	*All*	Legalizing the issuance of bonds of the village of Fishkill Landing, Dutchess county, to pay for extraordinary expenditures.						
1912	6	*All*	Greater New York charter, levy of taxes, amending L. 1901, ch. 466, §§ 222, 900.						
1912	7	*All*	Village of Medina, village officers, annual election, fiscal year, amending charter, L. 1909, ch. 545, §§ 7, 11, 50.						
1912	8	*All*	Street improvement in the village of Hoosick Falls, amending L. 1909, ch. 541, § 16.						
1912	9	*All*	Creating a commission on Barge Canal operation and making appropriation to meet expenses.						
1912	10	*All*	City of Albany authorized to sell to county of Albany the almshouse farm.						
1912	11	*All*	City of Albany authorized to sell to the county of Albany the high school property in city of Albany.						
1912	12	*All*	Legalizing the issue and sale of bonds of the county of Orange.						
1912	14	*All*	Appropriation for construction of Buffalo State Normal and Training School.						
1912	15	*All*	State College of Forestry at Syracuse University, management and control of college, amending L. 1911, ch. 851, §§ 3, 6.						
1912	16	*All*	Publication and posting notice of sale of bonds and certificates of indebtedness of the village of Port Chester, amending L. 1906, ch. 28, § 1.						

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[1] Appropriation.

The italicised matter following each chapter number indicates the part of such chapter treated
private and local in its operation.

Statutes				Amended or otherwise affected by			Express	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	C
1912	17	*All*	Publication of notice relating to district of assessment in paving of streets in the village of Port Chester, amending L. 1899, ch. 517, § 3.					
1912	18	*All*	Village of Port Chester, publication of notice for construction of sewers, amending charter, L. 1868, ch. 818, tit. 5, § 50.					
1912	19	*All*	Village of Port Chester, changing street grades, amending charter, L. 1868, ch. 818, § 29.					
1912	20	*All*	Legalizing the official acts of boards of supervisors in year 1911, in equalizing the assessed valuations of real estate between the several tax districts of the county.					
1912	21	*All*	Extending time in which to report and enlargement of powers of commission to investigate conditions under which manufacture is carried on in first and second class cities, amending L. 1911, ch. 561, § 3, and making appropriation.					
1912	23	*All*	Village of Peekskill, taxes, amending charter, L. 1883, ch. 117, tit. 9, § 2.					
1912	24	*All*	Village of Ossining, sidewalks and curbstones, amending charter L. 1910,, ch. 667, § 114.					
1912	25	*All*	City of Buffalo, conveyances upon tax sales, amending charter, L. 1891, ch. 105, § 115.					
1912	28	*All*	Town of Eastchester in county of Westchester, authorized to expend a certain sum of money for purchase of fire engine, and to issue bonds.					
1912	29	*All*	Village of Port Chester authorized to issue bonds for purpose of repairing "old Willet avenue fire house."					
1912	30	*All*	Village of Albion, amending charter generally, L. 1879, ch. 142.					
1912	31	*All*	Town board of the town of Perry, Wyoming county, may discontinue old cemetery in village of Perry and remove bodies interred there.					

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	32	*All*.....	Common council of city of Buffalo authorized to fix the annual salary of the superintendent of education.						
1912	33	*All*.....	Appointment of trustees of the trust created by the will of Josiah Quimby for the benefit of the meeting of the Society of Friends in Westchester county.						
1912	36	*All*.....	Providing for the erection of a state armory and stable in the city of Albany, acquiring a site therefor and making an appropriation.						
1912	38	*All*.....	Appropriation to reimburse town of Rye, Westchester county, for money paid to state for grant of land under water.						
1912	39	*All*.....	Legalizing bonds of union free school district number eight of the town of Cortlandt, Westchester county, for purchase of additional school site.						
1912	41	*All*.....	Legalizing proceedings of inhabitants of union free school district number six of the town of West Seneca, Erie county, in issuance and sale of bonds, amending L. 1911, ch. 459, title and §§ 1–3.						
1912	42	*All*.....	Appropriation from revenues of the state reservation at Saratoga Springs for improvement of reservation.						
1912	44	*All*.....	Appropriation for state commission of highways for the maintenance and repair of public highways improved or constructed by state aid.						
1912	46	*All*.....	Appropriation for construction of cattle building on state fair grounds at Syracuse, and for improvement of grounds.						
1912	47	*All*.....	Appropriation for repair and improvement of mechanical and other structures and works on and connected with canals of the state.						
1912	48	*All*.....	Appropriation to purchase new site for Utica State Hospital.						

The italicised matter following each chapter number indicates the part of such chapter treated a private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly r by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1912	53	*All*..... All......	Appropriation for construction of a new bridge over Black River canal in village of Boonville.	1914	364[1]			
1912	54	*All*.....	City of Rochester fire pension fund, amending charter, L. 1907, ch. 755, § 336, subd. 1, ¶ (f).					
1912	55	*All*.....	City of Rochester, issue of bonds and notes, amending charter, L. 1907, ch. 755, § 96.					
1912	58	*All*.....	City of Rochester, property clerk in department of public safety, amending charter, L. 1907, ch. 755, § 353 (added).					
1912	61	*All*.....	Additional appropriation to provide for deportation of alien insane and for office expenses of state board of alienists.					
1912	63	*All*.....	City of Buffalo, salaries of members of board of assessors, amending charter, L. 1891, ch. 105, § 474.					
1912	64	*All*.....	Legalizing taxes levied for repairs of highways upon assessment rolls of towns for the year 1911.					
1912	71	*All*.....	Legalizing official acts of certain justices of the peace.					
1912	76	*All*.....	Village of Batavia, funds for sidewalk improvements, amending charter, L. 1884, ch. 195, tit. 4, § 10.					
1912	78	*All*.....	Legalizing official acts of notaries public and commissioners of deeds.					
1912	80	*All*.....	City of Jamestown, amending charter generally, L. 1907, ch. 387, §§ 25, 28, 31, 34, 64, 116, 137, 173, 178.					
1912	82	*All*.....	Appropriation for improvement of Erie canal, the Oswego canal and the Champlain canal.					
1912	84	*All*.....	City of Ogdensburg authorized to provide for improvement of certain streets therein and to issue bonds.					
1912	85	*All*.....	City of Ogdensburg, adoption of sanitary code, amending charter, L. 1893, ch 87, § 19, subd. 14, § 118 (added); repealing § 19, subd. 15.					

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[1] Reappropriation.

e italicised matter following each chapter number indicates the part of such chapter treated as special. ate and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
2	86	*A!*.....	Commissioners of sinking fund of the city of New York empowered to assign to board of trustees of the College of City of New York real property in Twelfth ward.						
2	87	*All*.....	Appropriation for paying salaries of employees in Department of Labor.						
2	93	*All*.....	Repealing L. 1905, ch. 138, publication of official notices by board of supervisors of Westchester county.						
2	94	*All*.....	Repealing L. 1905, ch. 137, publication of official notices by county clerk of Westchester county.						
2	108	*All*.....	Greater New York charter, levying and collection of water rents, amending L. 1901, ch. 466, §§ 476, 1022.						
2	110	*All*.....	Appropriation for payment of interest on canal debt.						
2	111	*All*.....	Appropriation for payment of principal and interest on the debt for the Saratoga Springs reservation.						
2	112	*All*.....	Appropriation for payment of interest on the debt for highway improvement.						
	113	*All*.....	Appropriation for payment of interest on debt for Barge Canal terminals.						
	114	*All*.....	Appropriation for payment of interest on the Palisades Interstate Park debt.						
	115	*All*.....	Appropriation for payment of portion of principal of canal debt.						
	116	*All*.....	Appropriations to pay interest on the canal debt.						
	117	*All*.....	Appropriation for payment of interest on debt for highway improvement.						
	126	*All*..... All.....	Village of White Plains, bond issue to meet deficiencies, amending charter, L. 1867, ch. 518, tit. 4, § 8.	....	...	....	1915	356	307
	127	*All*.....	Village of Saratoga Springs, licensing and registration of dogs, amending charter, L. 1866, ch. 220, §§ 90–102 (added).						

The italicised matter following each chapter number indicates the part of such chapter treate private and local in its operation.

Statutes				Amended or otherwise affected by			Expressl b	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	C
1912	128	*All*.....	City of Hornell, payment of interest and principal of water bonds, improvement of water works system, amending L. 1906, ch. 288, §§ 71, 193a (added), 194.					
1912	129	*All*.....	City of Lackawanna, appointment of interpreter in city court, amending charter, L. 1909, ch. 574, § 197.					
1912	130	*All*.....	Cost of children's fireproof museum building in borough of Brooklyn, amending L. 1907, ch. 120, § 1.					
1912	131	*All*.....	Greater New York charter, salaries of chairman of committee on finance and vice-chairman of board of aldermen, amending L. 1901, ch. 466, § 18.					
1912	132	*All*.....	Amount of bond issue for sites and buildings for fire and police departments in city of Mount Vernon, amending L. 1905, ch. 87, § 1.					
1912	133	*All*.....	Village of Lyons, officers and employees, amending charter, L. 1907, ch. 750, §§ 4, 35.					
1912	134	*All*.....	Village of Peekskill authorized to issue additional bonds for extending water mains.					
1912	135	*All*.....	City of Amsterdam authorized to issue bonds for the purpose of paying indebtedness.					
1912	137	*All*.....	Annual tax for public library in city of Syracuse, amending L. 1906, ch. 75, § 7a (added).					
1912	138	*All*.....	City of Buffalo, bond issue for municipal hospital for treatment of incipient tuberculosis, amending L. 1909, ch. 115, § 2.					
1912	139	*All*.....	City of Ithaca, officers and their duties, amending charter, L. 1908, ch. 503, §§ 6, 20, 20a (added), 44.					
1912	140	*All*.....	City of Buffalo, department of assessment, amending charter, L. 1891, ch. 105, §§ 137, 138, 140.					
1912	142	*All*.....	Town of Cortlandt, Westchester county, authorized to pay excise moneys to Peekskill Hospital of Peekskill, amending L. 1905, ch. 263, § 1.					

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	143	*All*.....	Incorporating Troy Academy, amending L. 1834, ch. 295; repealing L. 1839, ch. 4.						
1912	144	*All*.....	Granting leave of absence to veterans in civil service, in commemoration of the fiftieth anniversary of the battle of Gettysburg.						
1912	145	*All*.....	Recording in county clerk's office by the owner the name of his farm.						
1912	146	*All*.....	City of Buffalo, public buildings for conventions, amending charter L. 1891, ch. 105, § 401.						
1912	147	*All*.....	Exemption of surgeon dentists from jury duty in certain counties, amending L. 1895, ch. 369, § 20.						
1912	150	*All*.....	Columbia county authorized to issue bonds for the purpose of redeeming bonds and certificates of indebtedness heretofore issued.						
1912	152	*All*.....	Village of White Plains, refunding local assessment bonds or certificates of indebtedness.						
		All.....		....	...	....	1915	356	307
1912	153	*All*.....	Incorporating the board of managers of the Diocesan Missionary and Church Extention society of the Protestant Episcopal Church in the Diocese of New York.						
1912	155	*All*.....	Construction and maintenance of trunk sewer or sewers, sewage disposal works and outlet sewer, in the village of Port Chester and the issuance of bonds.						
		3.......		1917	15				
1912	159	*All*.....	City of Mount Vernon, increasing amount of bonds for repaving streets, amending L. 1909, ch. 361, § 1.						
1912	160	*All*.....	Providing for erection of a boathouse, shelters, wharves and retaining walls at city of Buffalo for naval militia, appropriation.						
		2.......		1913	274	1			
		2.......		1914	390				
1912	167	*All*.....	Amount of salaries and expenses in the office of clerk of New York county for indexing and preserving records, amending L. 1906, ch. 661, § 4c.						
1912	176	*All*.....	Canterbury Fire Company, erection of engine house and creation of fire district, amending L. 1830, ch. 272, § 4a (added).						

The italicised matter following each chapter number indicates the part of such chapter treated a private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly r by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1912	177	*All*.....	Term of commission to inquire into prices, purity, production, distribution and consumption of food and food stuffs, farm and dairy produce in state of New York, amending L. 1911, ch. 787, § 3.					
1912	180	*All*.....	Legalizing deed of conveyance by Bryn Mawr Union Church to the Bryn Mawr Park Presbyterian Church.					
1912	181	*All*.....	Trustees of Congregational Church of Cambridge authorized to convey certain real property to Village of Cambridge for municipal purposes.					
1912	184	*All*.....	Village of Hoosick Falls, street improvement, amending L. 1909, ch. 541, § 14.					
1912	186	*All*.....	Issue and sale of canal bonds, amending L. 1910, ch. 66, § 2.					
1912	187	*All*.....	City of Syracuse authorized to convey certain real property not required for municipal purposes.					
1912	188	*All*.....	City of Lackawanna authorized to purchase and cancel bonds of city issued in excess of cost of improvement for which issued.					
1912	191	*All*.....	New York city consolidation act, salaries of process servers in district attorney's office, amending L. 1882, ch. 410, § 1503.					
1912	196	*All*.....	City of Albany, amount of bonds for street improvements, amending L. 1904, ch. 466, § 5.					
1912	197	*All*.....	City of Little Falls, pay of policemen, amending charter, L. 1895, ch. 565, § 17.					
1912	198	*All*.....	City of Buffalo, department of police, amending L. 1891, ch. 105, §§ 187, 188, 190, 191, 211.					
1912	201	*All*.....	Investment of the permanent fund of Christ Church, Lockport.					
1912	209	*All*.....	Direct tax imposed for the general fund and for annual contributions to canal debt sinking fund, barge canal terminials sinking fund, highway improvement sinking fund and Palisades Interstate Park debt sinking fund.					

ach chapter number indicates the part of such chapter treated as special,

s	Amended or otherwise affected by			Expressly repealed by		
bject and Disposition	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
of Watkins, indebted- amending charter, L. ch. 125, tit. 8, § 2.						
county authorized to es- n and maintain a public al.						
instruments excepted reindexing in the office ister in the county of York, amending L. 1910, 2, § 1.						
f treasurer to Steuben y made a salaried office regulating its manage-						
Transit Act, amending ally, L. 1891, ch. 4.						
tion of the fiftieth anni- y of the battle of Get- rg, and making an ap- rtion therefor.	1913 1913	550[1] 725[2]				
tended for Champlain Sanford Railroad Com- to begin and finish con- ion of its railroad.	1915	144[3]				
g L. 1899, ch. 151, elec- of county treasurer of ra county.						
ng the time of the Buf- nd Susquehanna Rail- Company to finish its						
taxes in the towns of lin county shall be re- ed and levied.						
nd indexing of unpaid in office of county clerk ondaga county, amend- 1893, ch. 520, § 3.						
iation for highway im- ment purposes.........	1914	526[4]				
ting tracks of street ads intersecting site for house in the county of York, amending L. 1903, 36, § 15c (added).						
New York charter, of absence without pay fficers and employees, ding L. 1901, ch. 466, 9-b (added).						

ommission for the battlefields of Gettysburg, Chattanooga and

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	255	*All*.....	Conservation Commission directed to investigate causes of high and low water in Lake George.						
1912	256	*All*.....	Supervisors of towns of German Flats and Warren, in county of Herkimer shall cause unpaid taxes to be reassessed and levied.						
1912	257	*All*.....	Legalizing the issuance of bonds by the city of Oneonta for paving of certain streets.						
1912	259	*All*.....	City of Cohoes permitted to audit and pay claim of Grattan Construction Company for constructing sewer in alley between Maple avenue and Locust avenue.						
1912	260	*All*.....	City of Newburgh authorized to appropriate money for conventions of State Firemen's Association and Grand Army of Republic held in said city.						
1912	273	*All*.....	Extending time to make a report and powers and duties of the Lake Champlain Tercentenary Commission, amending L. 1908, ch. 149, §. 4						
1912	274	*All*.....	Jurisdiction conferred upon board of claims to hear, audit and determine alleged claims for expenses and services of expert witnesses and compensation of counsel employed during the investigation ordered by resolution of Senate, January 20th, 1910.						
1912	279	*All*.....	Village of Canandaigua, police department, amending L. 1893, ch. 666.						
		All......		....	...	....	1913	371	251
1912	280	*All*.....	City of Buffalo authorized to issue bonds for raising money to construct and extend system of water works.						
1912	281	*All*.....	City of Buffalo authorized to issue sinking fund water bonds.						
		1.......		1913	39				
1912	282	*All*.....	Suspension of navigation on Oswego canal during portion of season of nineteen hundred and twelve in order to expedite the work of improving.						
1912	284	*All*.....	City of Newburgh to cancel certificates of sale containing assessments for construction of sewer and providing for reassessment upon property described in the certificate.						

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1912	285	*All*	Trustees of the parochial fund of the Protestant Episcopal Church of the diocese of central New York authorized to transfer to corporation of any church in the diocese trust property.						
1912	287	*All*	Appropriation ($18,000) for payment of state's share of expense of acquiring bridge crossing Hudson river between counties of Saratoga and Rensselaer.						
1912	288	*All*	Compilation of indexes and records of Albany county clerk's office, amending L. 1893, ch. 429, §§ 1, 3.						
1912	291	*All*	Powers and duties of arbitration committee of the New York Produce Exchange, amending L. 1862, ch. 359, § 5.						
1912	295	*All*	Village of Port Chester, police pension fund, amending L. 1903, ch. 285, §§ 1, 2, §§ 16–19 (added).						
1912	298	*All*	Provision for issuing bonds to the amount of not to exceed fifty million dollars for constructing and improving state and county highways.						
		6a (added)		1918	626				
		All		1913	787[1]				
		All		1913	804[2]				
		All		1913	808[3]				
		All		1913	809[3]				
		All		1914	271[4]				
		All		1914	516[4]				
		All		1915	135[5]				
		All		1915	688[5]				
		All		1915	689[5]				
		All		1915	729[4]				
		All		1916	597[5]				
		All		1916	642[3]				
		All		1918	353[3]				
		All		1918	368[4]				
1912	299	*All*	Legalizing tax election held in in city of Niagara Falls for purpose of establishing public market.						
1912	302	*All*	Validating the incorporation and legalizing the acts of the Glenside Cemetery Association of New York Mills.						

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[1] Rate of interest.
[2] Direct tax for sinking fund.
[3] Appropriation to pay interest.
[4] Appropriation to sinking fund.
[5] Appropriation.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	303	*All*.....	World's Dispensary Medical Association, a domestic corporation, authorized to take and hold property in trust, and extending its corporate existence						
1912	304	*All*.....	Purposes of New York City Baptist Mission Society, amending L. 1893, ch. 410, § 1.						
1912	305	*All*.....	Incorporating the National Academy Association						
1912	307	*All*.....	Legalizing certain deed from Ella Keith and other grantors to Robert Moody.						
1912	308	*All*.....	Exempt Firemen's Benevolent Association of the city of Yonkers entitled to percentage on tax on receipts of the foreign fire insurance companies doing business in city Yonkers.						
1912	311	*All*.....	Use and occupancy of the hall of records in the county of New York, amending L. 1907, ch. 712, § 1.						
1912	313	*All*.....	Incorporating the Society for Welfare of the Jewish Deaf.						
1912	314	*All*.....	Town of Shelter Island, in the county of Suffolk authorized upon vote of election to acquire docks and landing places for public use.						
1912	316	*All*.....	Effecting the incorporation as a membership corporation of Congregation Makower of Poland.						
1912	317	*All*.....	Name of New York City Church Extension and Missionary Society of the Methodist Episcopal Church changed to New York City Society of the Methodist Episcopal Church, amending L. 1866, ch. 581, §§ 1–4.						
1912	319	*3*....... All.....	Appropriation for establishment of state school of agriculture on Long Island.	 1914	 521[1]				
1912	320	*All*.....	Appropriation ($6,000,000) for improvement of Cayuga and Seneca canals.						
1912	322	*All*.....	Appropriation ($12,000,000) for furnishing proper terminals and facilities for barge canal traffic.						

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[1] Unexpended balance reappropriated.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	324	*All*.....	City of Niagara Falls, amending charter generally, L. 1904, ch. 300.						
1912	325	*All*.....	Time for construction and improvement of portions of state routes limited, amending L. 1911, ch. 154, § 2.						
1912	326	*All*.....	Village of Peekskill, paving and macadamizing streets, amending L. 1883, ch. 117, tit. 7, § 2, subd. 3; Art. 7, § 2, subd. 3 (renumbered subd. 4).						
1912	327	*All*.....	City of Rome, payment of cost of construction of sewage disposal plant, amending charter L. 1904, ch. 650, § 92.						
1912	328	*All*.....	Greater New York charter, uniformed force of the fire department, amending L. 1901, ch. 466, § 740.						
1912	339	*All*.....	Compensation of special county judge of Monroe county, amending L. 1864, ch. 368, § 3.						
1912	345	*All*.....	Payment of pensions of the relief and pension fund of the fire department of the city of Utica, amending L. 1907, ch. 161, § 5, subd. 1, § 5, subd. 4 (added).						
1912	346	*All*.....	George W. Stewart, his heirs or assigns, of Ticonderoga, authorized to maintain a ferry across Lake Champlain.						
1912	347	*All*.....	Certificates issued at sales of land for unpaid taxes in city of Albany, amending L. 1850, ch. 86, § 48.						
1912	348	*All*.....	Claims of publishers of official newspapers in the county of Rensselaer authorized to be audited by the county.						
1912	349	*All*.....	Legalizing the proceedings of the common council of the city of Cohoes in the pavement of Vine street and providing for the payment of the expense thereof.						
1912	350	*All*.....	City of Cohoes, penalty of bond of overseer of the poor, amending charter, L. 1892, ch. 671, tit. 5, § 59.						
1912	353	*All*.....	Greater New York charter, leave of absence with pay of employers, amending L. 1901, ch. 466, § 1568.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	354	*All*.....	City of Rochester, notice to owner or occupant of real property to do certain acts, amending charter L. 1907, ch. 755, § 188, subd. 4 (added).						
1912	355	*All*.....	City of Lackawanna, giving women taxpayers the right to vote upon propositions involving a tax, amending charter, L. 1909, ch. 574, §§ 16, 86.						
1912	356	*All*.....	Empowering the city of Mount Vernon to acquire a strip of land now constituting the right of way of the New York and Harlem Railroad as soon as abandoned for railroad purposes.						
1912	357	*All*..... All......	Expense of construction and maintenance by the city of New York of court house in county of Kings, amending L. 1909, ch. 390, §§ 6–8.	....	...	....	1914	218	
1912	358	*All*..... 2.......	Payment of contractors for city work in the city of Albany...	1917	169	1			
1912	359	*All*.....	Fixing the compensation of election officers in the city of Albany, and repealing L. 1883, ch. 298, tit. 21, § 7.						
1912	360	*All*.....	Legalizing the publication of advertisement of sale for unpaid assessments in the city of Albany, noticed for Octotober 16, 1911.						
1912	365	*All*.....	Village of Bath, qualification of voters, amending charter, L. 1895, ch. 785, tit. 5, § 9.						
1912	366	*All*....	Commissioner of parks and the care and regulation of parks, streets and squares in village of Saratoga Springs, amending charter, L. 1866, ch. 220, §§ 91, 92, 93, 94 (added).						
1912	367	*All*.....	City of Buffalo, reinstatement of firemen, amending charter, L. 1891, ch. 105, § 250.						
1912	369	*All*.....	City of Buffalo, ordinances for protection of trees, amending charter, L. 1891, ch. 105, § 323c.						
1912	370	*All*.....	City of Rochester, supply and distribution of water, amending charter, L. 1907, ch. 755, § 273.						
1912	372	*All*.....	Greater New York charter, payment in instalments of assessments for local improvements, amending L. 1901, ch. 466, § 1019.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	373	*All*..... All.....	City of Buffalo issue bonds for construction of public trunk sewers.	....	...	....	1916	162	
1912	374	*All*.....	City of Buffalo, cancellation of certain classes of bonds, amending charter L. 1891, ch. 105, § 27.						
1912	375	*All*.....	City of Buffalo may allow certain claims for damages connected with lands under water.						
1912	379	*All*.....	Proceedings of board of trustees of the village of Saint Johnsville, Montgomery county, for establishment of a municipal board legalized.						
1912	381	*All*.....	City of Buffalo authorized to issue bonds for continuing the construction and operation of a system of water works.						
1912	385	*All*.....	City of Cortland, uniform building lines in and upon streets, amending charter, L. 1900, ch. 160, § 67 (added).						
1912	386	*All*.....	Legalizing proceedings of the village of Scotia, Schenectady county, in issuing notes and authorizing bond issue to redeem notes.						
1912	387	*All*.....	Application of the proceeds of sale of state arsenal lands and building in city of New York, amending L. 1911, ch. 898, §§ 2, 3.						
1912	391	*All*.....	Establishing a system of water-works for the town of Waterford, Saratoga county.						
1912	392	*All*.....	City of Albany authorized to improve its river front and to issue bonds to pay city's share of expense.						
1912	393	*All*..... All.....	Board of statutory consolidation to report to Legislature plan for consolidation and simplification of the civil practice in the courts of the state.	1913	713[1]				
1912	394	*All*.....	City of North Tonawanda, moneys to be raised by taxation, amending charter, L. 1907, ch. 752, tit. 24, § 1 .						
1912	395	*All*..... All.....	City of Newburgh, salary of deputy city clerk, amending charter, L. 1907, ch. 203, tit. 4, § 7.	....	...	....	1916	575	198

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[1] Preparation of practice act, rules of court and short forms.

The italicised matter following each chapter number indicates the part of such chapter treated as speci private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	396	*All*.....	Greater New York charter, dedication of lands for market purposes, amending L. 1901, ch. 466, § 163.						
1912	397	*All*..... All......	Appropriation for construction of drain from culvert under Erie canal in city of Lockport.	1914	370[1]				
1912	398	*All*.....	Greater New York charter, payment of wages and salaries, amending L. 1901, ch. 466, § 149.						
1912	399	*All*.....	Greater New York charter, assessments for local improvements confirmed, amending L. 1901, ch. 466, § 1019a (added).						
1912	400	*All*.....	Greater New York charter, sinking fund commissioners to lease and sell land under water, amending L. 1901, ch. 466, § 205b (added).						
1912	401	*All*.....	Greater New York charter, appeals and costs in abandonment proceedings, amending L. 1901, ch. 466, §689.						
1912	402	*All*..... All......	City of Binghamton, amount of sewer bonds, amending L. 1907, ch. 751, § 204.	....	...	....	1917	668	3
1912	403	*All*..... 2, subd. 8a (added)	Establishing a firemen's relief and pension fund for the fire department of the city of Binghamton	1917	260				
1912	404	*All*.....	City of Binghamton authorized to contract with village of Lestershire to construct trunk sewer.						
1912	405	*All*.....	Land in the borough of Bronx granted and conveyed to the city of New York by commissioners of the land office of the state.						
1912	407	*All*.....	Refunding, cancellation and adjustment of assessments levied for opening of Spencer place in Twenty-third ward, borough of Bronx, in the city of New York.						
1912	408	*All*.....	Rights of purchasers of lands sold for taxes on assessments in the city of Syracuse, amending L. 1906, ch. 75, §§ 23, 27.						

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[1] Additional appropriation.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	409	*All*.....	Filing of unpaid state and county taxes, in the city of Syracuse, amending L. 1906, ch. 75, §§ 18–20.						
1912	410	*All*.....	City of Mount Vernon, appointment of assistant corporation counsel, amending charter, L. 1892, ch. 182, § 128						
1912	411	*All*.....	City of Oswego, sewers and sewage disposal plants and issuance of bonds, amending charter, L. 1895, ch. 394, § 330a, §§ 330b–330k (added).						
1912	412	*All*.....	City of Buffalo, abandoned railroad embankments removed, amending charter, L. 1891, ch. 105, § 395.						
1912	413	*All*.....	Cancellation of tax certificates by the city of Newburgh.						
1912	414	*All*..... All......	City of Newburgh, sell and convey real property, amending charter, L. 1907, ch. 203, tit. 3, § 9, subd. 37.	....	...	....	1916	575	198
1912	415	*All*.....	City of Middletown, street lighting, amending charter, L. 1902, ch. 572, § 107, subd. 8 (added); § 112a (added), § 119, subd. 1.						
1912	416	*All*.....	City of Lockport, publication of ordinances and notices, sale of property, amending charter, L. 1911, ch. 870, §§ 69, 281.						
1912	417	*All*.....	City of North Tonawanda, election, terms and salaries of city officers, amending charter, L. 1907, ch. 752, tit. 3, §§ 3, 6, 8, 10, 14.						
1912	418	*All*.....	Greater New York charter, undertakings in abandonment proceedings, amending L. 1901, ch. 466, § 688.						
1912	419	*All*.....	Greater New York charter, orders and commitments in abandonment proceedings, amending L. 1901, ch. 466, § 686.						
1912	420	*All*.....	Greater New York charter, disorderly persons, amending L. 1901, ch. 466, § 685.						
1912	421	*All*.....	Greater New York charter, new security in abandonment proceedings, amending L. 1901, ch. 466, § 690.						

The italicised matter following each chapter number indicates the part of such cha private and local in its operation.

Statutes				**Amended or otherwise affected by**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**
1912	422	*All*.....	Common council of city of Middletown, authorized to determine that city pay portion of street paving.			
1912	423	*All*.....	City of Watervliet, salaries of president of common council and aldermen, amending charter, L. 1911, ch. 184, § 17.			
1912	424	*All*.....	City of Yonkers, amending charter generally, L. 1908, ch. 452.			
1912	425	*All*.....	City of Corning, repaving Market street, amending charter, L. 1905, ch. 142, § 110a (added).			
1912	426	*All*.....	Grant of lands under water to city of Yonkers for sewer purposes.			
1912	427	*All*.....	Market property in Ninth ward in the city of New York assigned to department of docks and ferries.			
1912	428	*All*.....	City of Plattsburgh, amending charter generally, L. 1902, ch. 269.			
1912	429	*All*.....	Greater New York charter, police board to license bookers of emmigrant passengers, L. 1901, ch. 466, § 348, repealed.			
1912	430	*All*.....	City of Mount Vernon, election and compensation of city officers, amending charter, L. 1892, ch. 182, § 11; § 23 repealed, § 23 (added).			
1912	431	*All*..... All.....	City of Lockport authorized to issue bonds for payment of costs of improvements to union school building.	1914	423[1]	
1912	432	*All*.....	Greater New York charter, punishment of officers and employees, amending L. 1901, ch. 466, § 1569 (added).			
1912	433	*All*.....	Greater New York charter, permits for construction of private sewers, amending L. 1901, ch. 466, § 395, subd. 3 (added)			
1912	434	*All*.....	Greater New York charter, construction of piers and docks regulated, amending L. 1901, ch. 466, § 821.			

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[1] Bond issues legalized.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	435	*All*.....	Greater New York charter, division of real estate in the bureau of street openings, amending L. 1901, ch. 466, § 258a (added).						
1912	436	*All*.....	Greater New York charter, sale of public property, amending L. 1901, ch. 466, § 1553.						
1912	437	*All*.....	City of Cortland, condemnation of lands for opening streets and highways and public parks, amending charter, L. 1900, ch. 160, § 74.						
1912	438	*All*..... All.....	City of Ithaca, powers of board of education, amending charter, L. 1908, ch. 503, §§ 180, 181, 188, subd. 3, 195.	....	...	....	1917	786	6
1912	439	*All*.....	Portions of state routes to be improved under an appropriation for highway improvement, amending L 1911, ch. 741, § 1.						
1912	440	*All*.....	Method, terms and conditions under which shall be determined the amount of any debt incurred by the city of New York for public improvement subsequent to the first day of January, nineteen hundred and ten.[1]						
1912	441	*All*.....	Trustees of public buildings authorized to sell Geological Hall in the city of Albany.						
1912	442	*All*.....	City of Rome, designation of official newspaper, amending charter, L. 1904, ch. 650, § 42.						
1912	443	*All*.....	City of Rome, raising money for extraordinary school expenses, amending charter, L. 1904, ch. 650, § 175.						
1912	446	*All*.....	Greater New York charter, compensation of teachers in department of public charities, amending L. 1901, ch. 466, § 663.						
1912	447	*All*.....	Hearing and determination of the claim of William A. Hart against the city of New York.						
1912	449	*All*.....	Greater New York charter, compensation of police force, amending L. 1901, ch. 466, § 276.						

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[1] For act describing method of determining debt incurred for rapid transit or dock improvement prior to January 1, 1910, see L. 1910, ch. 276.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1912	450	*All*.....	Granting the right to construct railroad on portion of Fourth avenue, in the city of Brooklyn, limited, amending L. 1861, ch. 299, § 7.						
1912	451	*All*.....	Greater New York charter, actions on undertakings in abandonment proceedings, amending L. 1901, ch. 466, § 687.						
1912	452	*All*.....	Greater New York charter, presentation of claims against the city, amending L. 1901, ch. 466, § 261.						
1912	453	*2*....... 2.......	Application of state fire marshall to cities of over one million inhabitants.	....	...	....	1915	4	2
1912	455	*All*..... All......	Greater New York charter, eligible lists of candidates for appointment on teaching staff, amending L. 1901, ch. 466, § 1089.	....	...	....	1917	786	6
1912	456	*All*.....	Greater New York charter, custody of jail buildings in Queens county transferred, amending L. 1901, ch. 466, § 695.						
1912	457	*All*.....	Greater New York charter, supplying deficiencies in the income of fire department relief fund, amending L. 1901, ch. 466, § 188.						
1912	458	*All*.....	Greater New York charter, in prevention of fires, amending L. 1901, ch. 466, §§ 727, 775a (added), 776, 777a						
1912	459	*All*.....	City of New York, salaries of the members of the supervising and teaching staffs of board of education, amending charter, L. 1901, ch. 466, § 1091.						
1912	460	*All*.....	Inferior Criminal Courts Act of city of New York, commitments of women, amending L. 1910, ch. 659, § 89.						
1912	461	*All*.....	Greater New York charter, assessments and water rents, amending L. 1901, ch. 466, § 937.						
1912	462	*All*.....	Greater New York charter, qualifications of members of fire department, amending L. 1901, ch. 466, § 734.						

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	463	*All*.....	Greater New York charter, cemeteries in Queens and Richmond counties, amending L. 1901, ch. 466, § 1539a.						
1912	464	*All*.....	Inferior Criminal Courts Act of city of New York, qualification of magistrates, amending L. 1910, ch. 659, § 52.						
1912	467	*All*.....	Inferior Criminal Courts Act of the city of New York, bail before indictment, amending L. 1910, ch. 659, § 72a (added).						
1912	468	*All*..... All......	Municipal court of the city of New York, costs in action by working woman, amending L. 1902, ch. 580, § 340.	....	...	....	....	1915	279
1912	469	*All*.....	Inferior Criminal Courts Act, sessions of court on Sunday, amending L. 1910, ch. 659, § 71.						
1912	470	*All*.....	City of New York authorized to accept deeds of release of undivided interests in fee of portions of Montague street, in borough of Brooklyn.						
1912	471	*All*.....	City of Fulton authorized to borrow money to pay teachers' salaries and other expenses of the Board of Education.						
1912	472	*All*.....	Legalizing the bonds of the city of Newburgh issued for purpose of improving Water and Colden streets.						
1912	473	2.......	Making immediately available money appropriated for improvements and completion of highway route number fifteen.						
1912	478	*All*....	Powers of the board of water supply of the city of Mount Vernon, amending L. 1911, ch. 127, §§ 15, 16.						
1912	479	*All*.....	Greater New York charter, retirement from active service of officers, clerks and employees, amending L. 1901, ch. 466, § 165.						
1912	480	*All*.....	Greater New York charter, qualifications of patrolmen, amending L. 1901, ch. 466, § 284.						
1912	483	*All*.....	Greater New York charter, damages for change of grade, amending L. 1901, ch. 466, § 951.						

The italicised matter following each chapter number indicates the part of suc private and local in its operation.

Statutes				Amended or oth wise affected b	
Law	Ch.	§	Subject and Disposition	Law	Ch.
1912	484	*All*.....	Greater New York charter, paving of streets and method of payment therefor, amending L. 1901, ch. 466, § 948.		
1912	485	*All*.....	Commissioners of the sinking fund of New York city authorized to grant to railroad corporations rights of way in lands acquired by the city in counties of Westchester and Putnam.		
1912	486	*All*.....	Services prerequisite for retirement of employees for incapacity by justices of appellate division, first department, amending L. 1911, ch. 855, § 1.		
1912	487	*All*.....	Disposition of proceeds of sale of site of Oswego Normal and Training School, amending L. 1909, ch. 592, § 4.		
1912	488	*All*.....	Construction of bridge over Erie canal at Vliet street in city of Cohoes, and making appropriation ($7,000) therefor.		
1912	489	*All*.....	Appointment of a commission for the dedication of the Saratoga battle monument and making an appropriation ($2,500) for commission.		
1912	490	*All*.....	Appropriation for maintenance		
		All......	and repairing of public highways improved or constructed by state aid.	1914	521[1]
1912	491	*All*.....	Appropriation ($110,000) for extension of power house at Kings Park state hospital and appropriation ($12,000) for cold storage building at Manhattan state hospital.		
1912	492	*All*.....	Greater New York charter, assessment bonds, amending L. 1901, ch. 466, § 181.		
1912	493	*All*.....	Village of White Plains, powers		
		All......	and duties of trustees, amending charter, L. 1867, ch. 518.	....	...
1912	494	*All*.....	Repealing L. 1869, ch. 294, incorporating fire department of city of Binghamton.		
1912	495	*All*.....	Reappropriation of funds heretofore appropriated for installing elevator in state armory at Elmira and making further appropriation ($1,500).		

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[1] Unexpended balance reappropriated.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	496	*All*.....	Reappropriating the unexpended balance of appropriation made for highway improvement purposes						
1912	497	*All*.....	Reappropriate certain unexpended balances of former appropriations for same purposes.						
1912	498	*All*.....	Appropriation ($2,000) for improving drainage from lands of Matteawan State Hospital.						
1912	499	*All*....	Appropriation ($280,000) for payment of balance due newspapers for publication of concurrent resolutions and proposed amendments to the constitution, and ($47,000) for the publication of general laws.						
1912	500	*All*.....	Office of sheriff of city and county of New York, assistant counsel, amending L. 1890, ch. 523, § 1.						
1912	501	*All*.....	Greater New York charter, justice of municipal court reimbursed in contest as to title of office, amending L. 1901, ch. 466, § 231.						
1912	502	*All*.....	Establishing a state reformatory for misdemeanants and making appropriation ($50,000).						
1912	503	*All*.....	Appropriation ($10,000) for removal of ice gorges in the Hudson river.						
1912	504	*All*.....	Appropriation ($15,000) for water supply for the Kings Park State Hospital.						
1912	505	*All*.....	Appropriation for the state's proportion of amounts appropriated for repairs of highways.						
		All.....		1914	521[1]				
1912	506	*All*.....	Appropriation ($24,000) for increase of wages of locktenders on the canals.						
1912	507	*All*.....	Appropriation ($20,000) to compensate village of Newark for use of sewer system by New York State Custodial Asylum for Feeble-Minded Women.						

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[1] Unexpended balance reappropriated.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1912	508	*All*.....	Appropriation ($15,000) for purchase by the state of maps and other documents relating to lands in certain towns forming a part of Van Rensselaer Manor.						
1912	509	*All*.....	Appropriation ($225,000) for acquisition of the mineral and mining rights of the heirs of Phillip Philipse, in the counties of Putnam and Dutchess.						
1912	510	*All*..... All......	Construction of bridge over Black River canal at Lyons Falls, and making appropriation.	 1913	 246[1]				
1912	511	*All*..... All......	Continuance of work of mapping certain canal lands and lands adjacent thereto, authorized and making an appriation.	 1913	 290[2]				
1912	512	*All*.....	Appropriation ($200,000) for enforcing the provisions of the Agriculture Law, relating to diseases of domestic animals.						
1912	513	*All*.....	Board of estimate and apportionment of the city of New York authorized to pay the claims of John P. Worstell and Joseph P. McNamara.						
1912	516	*All*.....	Interest of the state in certain real estate in the city of Utica released to George Harris, as executor of the estate of Caroline Burridge, deceased.						
1912	517	*All*..... All...... All......	Appropriations for the reconstruction and decoration of state capitol; construction, equipment and decoration of state education building, and for construction and equipment of capitol power house.[1]	 1913 1914	 549[3] 521[4]				
1912	518	*All*.....	Appropriation ($50,000) for rebuilding bridge across South bay in the county of Washington.						
1912	519	*All*.....	Appropriation ($20,000) for establishment of a fish hatchery in county of Saint Lawrence.						

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[1] Reappropriation.

[2] Work continued.

[3] Subsequent appropriation.

[4] Unexpended balance reappropriated.

pter number indicates the part of such chapter treated as special,

and Disposition	Amended or otherwise affected by			Expressly repealed by		
	Law	Ch.	§	Law	Ch.	§
n for alteration of se for use of Court s, and reappropriat- ended balances.	1914	394[1]				
on for re-establish- state library and for hase of furniture and tures for state educa- ding.	1914	521[2]				
to the city of New slands, marsh and lands in Jamaica creation of new har-						
Elmira, salaries of al- n, amending charter, L. ch. 477, § 33.						
iation for establish- of fish hatchery in War- ounty.	1914	371[1]				
lands in town and vil- of Saratoga Springs for id taxes, amending L. , ch. 68, §§ 9–13 (added).						
ling of certain streets and nues in the village and n of Saratoga Springs, nding L. 1873, ch. 670, . [§ 4 here amended is § 4 L. 1874, ch. 256.]						
ter New York charter, mptroller to pay contract- s, amending L. 1901, ch. 6, § 422.						
ater New York charter, ad- ertising proposals and de- osits accompanying bids, mending L. 1901, ch. 466, § 420.						
vestment of police pension fund for the city of Elmira, amending L. 1900, ch. 525, § 2.						
ppropriations for construction, improvements, repairs and equipment at various state institutions.	1914	521[2]				
Equalization of salaries of clerks in the district attorney's office in the county of New York.						
Removal of steam railroad grade crossings in the city of Syracuse..................	1917	515 ...	1	1917	515	2

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on. [2]Unexpended balance reappropriated.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				**Amended or otherwise affected by**			**Expressly repealed by**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1912	533	2 (renumbered from 11)		1917	515	2			
		3		1917	515	3			
		4–6		....	...	....	1917	515	4
		4–15 (added)		1917	515	4			
		7 (renumbered 16)		1917	515	5			
		8–10 (renumbered 18–20)		1917	515	7			
		11 (renumbered 2)		1917	515	2			
		12 (renumbered 21)		1917	515	8			
		13 (renumbered 17)		1917	515	6			
		14–18 (renumbered 22–26)		1917	515	9			
		27–29 (added)		1917	515	10			
1912	536	*All*	Pinelawn cemetery in the town of Babylon, Suffolk county, authorized to transfer lands to the trustees of St. Patrick's Cathedral in the city of New York.						
1912	537	*All*	Appropriation ($35,000) for construction of dikes for protection of property adjacent to Delaware river in city of Port Jervis, and acquisition of necessary lands.[1]						
1912	540	*All*	Office of county clerk of county of Queens made a salaried office.						
1912	541	*All*	Panama-Pacific International Exposition Commission created and making an appropriation ($250,000) therefor.						
		2		1913	818				
		3, 5		1916	16				
		All		1913	347[2]				
1912	546	*All*	Appropriation for support of government.						
1912	547	*All*	Appropriations for certain expenses of government and various miscellaneous appropriations, and supplying deficiencies in former appropriations.						
1912	548	*All*	Erection of the county of Bronx from territory comprised within the limits of the borough of Bronx in the city of New York.						
		3		1913	825				
		3		1918	632				
		4, 8		1913	266				
		9a (added)		1913	823				
		All		1913	824[3]				
		All		1918	90[4]				
1912	550	*All*	Sanitary trunk sewer and sanitary outlet sewer in county of Westchester, amending L. 1905, ch. 646, §§ 3, 4, 14.						
1912	551	*All*	Abandoning Jubilee water system in Buffalo, proceeds of sale for benefit of inhabitants of the Parish tract, amending L. 1898, ch. 76, §§ 3, 4.						

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[1] See L. 1904, ch. 716.

[2] Subsequent appropriation.

[3] Grand and trial jurors.

[4] Commissioner of records.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1912	552	*All*.....	City of Buffalo, police department, amending L. 1891, ch. 105, § 187.						
1912	553	*All*.....	Membership and duties of commission for government and control of tuberculosis hospital for city of Buffalo, amending L. 1910, ch. 26, §§ 1, 2.						
1913	2	*All*.....	Appropriation to investigate departments, boards, bureaus and commissions of the state.						
1913	4	*All*.....	Incorporating the Harriman Research Laboratory.						
1913	5	*All*.....	Appropriation for investigation, care, maintenance and improvement of the state reservation at Saratoga Springs.						
1913	6	*All*.....	Appropriation for certain immediate expenses of Legislature, and deficiencies in former appropriations.						
1913	8	*All*.....	City of Elmira, relating to limitation of moneys for city expenses, amending L. 1906, ch. 477, § 32, subd. h.						
1913	13	*All*..... All......	City of Buffalo, issue and sale of bonds for school purposes, amending charter, L. 1891, ch. 105, § 329.	....	...	....	1917	786	6
1913	14	*All*..... All......	Village of White Plains, maintaining public library, amending L. 1905, ch. 148, § 3.	....	...	....	1915	356	307
1913	15	*All*.....	Repealing L. 1819, ch. 66, jury districts in Washington county.						
1913	20	*All*.....	Village of Mohawk, Herkimer county, commissioners for Weller library, amending L. 1844, ch. 157, § 17, subd. a (added).						
1913	27	*All*.....	Repealing L. 1899, ch. 85, minimum capital stock of fire or marine insurance corporations.						
1913	31	*All*.....	Greater New York charter, transfer of moneys, amending L. 1901, ch. 466, § 162.						
1913	32	*All*..... 1.......	City of New York to acquire site beyond its territorial limits for use of New York City Reformatory of Misdemeanants.	1915	26				
1913	33	*All*.....	Greater New York charter, cancellation of assessments, amending L. 1901, ch. 466, § 215.						

The italicised matter following each chapter number indicates the part of s private and local in its operation.

Statutes				Amended or o wise affected	
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**
1913	34	*All*.....	Greater New York charter, department of parks, amending L. 1901, ch. 466, §§ 612-b, 613, 617.		
1913	35	*All*.....	Greater New York charter, disposition of proceeds from personal property sold by board of education, amending L. 1901, ch. 466, § 1066.		
1913	36	*All*.....	Greater New York charter, transfer of cash balances in corporate stock funds, amending L. 1901, ch. 466, § 237.		
1913	37	*All*.....	Time extended for making final report of commissioners designated to revise procedure and practice in surrogates' court.		
1913	39	*All*.....	City of Buffalo, sinking fund water bonds, amending L. 1912, ch. 281, § 1.		
1913	42	*All*.....	Board of supervisors of Westchester county issue temporary loan bonds. [See L. 1902, ch. 342.]		
1913	44	*All*.....	City of Mount Vernon, school teachers' retirement fund, amending charter, L. 1892, ch. 182, §§ 229t, 229u.		
1913	45	*All*..... All......	Greater New York charter, power of superintendent of schools, amending L. 1901, ch. 466, § 1078.	....	...
1913	46	*All*.....	Village of Batavia, moneys for sewer system, amending charter, L. 1884, ch. 195, tit. 8, § 1.		
1913	56	*All*.....	City of Buffalo, common council and mayor authorized to lease certain lands.		
1913	57	*All*.....	Releasing interest of state in property and estate of Margaret E. Tompkins, deceased, to heirs and next of kin of Noah D. Tompkins, deceased.		
1913	58	*All*.....	Franklin county authorized to construct and maintain county road system, funds applicable, amending L. 1911, ch. 137, §§ 3, 5.		
1913	62	*All*.....	Certain lands under water in Flushing bay and Flushing creek and vicinity granted to city of New York.		
		5 (renumbered 3)		1917	605
		3 (renumbered 4)...........................		1917	605
		4 (renumbered 5).....................		1917	605

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1913	63	*All*.....	City of Hudson, election of officers, amending L. 1895, ch. 751, §§ 7, 9–14, 16, 20, 29, 38.						
1913	64	*All*.....	City of Hudson authorized to issue bonds for street improvement.						
1913	65	*All*.....	City of Buffalo, common council transfers to park commissioners control over Kenilworth avenue.						
1913	66	*All*.....	Lands under water granted to city of Buffalo by Commissioners of Land Office.						
1913	67	*All*.....	City of Oneida, cleaning and sprinkling streets, amending L. 1911, ch. 648, § 101.						
1913	74	*All*.....	Legalizing certain acts and proceedings of town of Harrison, Westchester county, and of the board of health of the village of Rye, in reference to sewer system.						
1913	75	*All*.....	Reappropriating unexpended balance of appropriation made to New York interstate bridge commission, and making additional appropriation.						
1913	77	*All*.....	City of Elmira authorized to issue bonds for paving purposes.						
1913	78	*All*.....	Repealing L. 1910, ch. 565, authorizing town board and superintendent of highways of the town of Wales, Erie county, to cancel assessments for improvement of Big Tree road.						
1913	79	*All*.....	Appropriation for necessary general expenses of land and naval forces of state.						
1913	84	*All*.....	Appropriation for expenses incident to proceeding entitled "The People of the State of New York ex rel. Mary C, Thaw against John W. Russell, Medical Superintendent of Matteawan State Hospital.						
1913	87	*All*.....	City of Yonkers, pensions for certain retired employees, amending L. 1908, ch. 452, art. 3, § 1, subd. 40 (added).						
1913	89	*All*.....	Village of Peekskill, to vote on issuing bonds for widening Washington street.						

The italicised matter following each chapter number indicates the part of suc private and local in its operation.

Statutes				Amended or oth wise affected b	
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**
1913	90	*All*	Extension of Riverside Park in New York city by filling in certain land under water for Robert Fulton monument, amending L. 1907, ch. 676, §§ 1, 2.		
1913	93	*All*	Village of Norwich, lighting contracts, amending L. 1904, ch. 7, tit. 6, § 9.		
1913	95	*All*	Legalizing official acts of notaries public and commissioners of deeds.		
1913	97	*All*	City of Mount Vernon, amount of bond issue for erection of municipal building, amending L. 1910, ch. 75, § 1.		
1913	98	*All*	City of Mount Vernon, amount of bonds for fire and police department buildings, amending L. 1905, ch. 87, § 1.		
1913	99	*All*	City of Mount Vernon, annual meeting of common council, amending L. 1892, ch. 182, § 158.		
1913	100	*All*	Rapid transit railways in cities of over one million inhabitants, parts of Brooklyn exempted, amending L. 1891, ch. 4, § 4.		
1913	104	*All*	Village of Saratoga Springs, comptroller's expense fund, amending L. 1866, ch. 220, § 82.		
1913	105	*All*	Town and village of Saratoga Springs, receiver of taxes collect interest on village funds, amending L. 1872, ch. 323, § 5.		
1913	106	*All*	Village of Saratoga Springs, amount of money for care of cemeteries, amending L. 1866, ch. 220, § 54, subd. 8.		
1913	107	*All*	Incorporating the Ministers and Missionaries Benefit Board of the Northern Baptist Convention.		
1913	110	*All*	Appropriation for care and maintenance of state education building.		
1913	114	*All*	City of Buffalo and county of Erie authorized to transfer to the other its interest in city and county hall.		
1913	115	*All*	Village of Catskill, boundaries, officers' eligibility to vote on propositions, amending L. 1860, ch. 68, §§ 1, 2, 4, 50.		

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1913	117	*All*	Appropriations, supplementary appropriations and reappropriations for improvements at state hospitals for insane.						
1913	118	*All*	City court of Buffalo, compensation of jurors, amending L. 1909, ch. 570, § 51.						
1913	119	*All*	Repealing L. 1859, ch. 390, auditing accounts by board of supervisors of Montgomery county.						
1913	120	*All*	Trustees of public lands in town of Eastchester, election and powers, amending L. 1846, ch. 185, §§ 1, 3, subds. 3, 4, 5, § 4.						
1913	121	*All*	Greater New York charter, vacations of employees, amending L. 1901, ch. 466, § 1567.						
1913	122	*All*	City of Buffalo authorized to borrow money, by issue of bonds, for participation in congress on school hygiene.						
1913	123	*All*	Village of Ossining sewer assessment bonds, amending L. 1910, ch. 667, § 133.						
1913	132	*All*	Board of supervisors of county of Schenectady authorized to borrow money, by issue of bonds, to complete and furnish new county jail and new county court house.						
1913	135	*All*	Attorney-General's appearance in Putnam county surrogate's court in proceedings for disposition of real property of Caroline Palmer validated.						
1913	137	*All*	Commission to investigate conditions under which manufacture is carried on in cities of first and second class continued, appropriation; supplementing L. 1911, ch. 561, as amended by L. 1912, ch. 21.						
1913	138	*All*	Justices of the Applelate Division of the Supreme Court in First Department to retire employees, amending L. 1911, ch. 855, § 1, § 2 (added).						
1913	142	*All*	Greater New York charter, proceedings for street openings, amending L. 1901, ch. 466, § 990.[1]						

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[1] Section 99 was neither re-enacted nor repealed by L. 1901, ch. 466. The substance matter is found in L. 1897, ch. 378, and as amended is treated in both charters.

The italicised matter following each chapter number indicates the part of su
private and local in its operation.

Statutes				**Amended or ot wise affected**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	
1913	149	*All*.....	Incorporating the Altman foundation.			
1913	150	*All*.....	County of Westchester, authorizing payments to injured or representatives of deceased volunteer firemen.			
1913	156	*All*.....	Incorporating Church Insurance Association, amending L. 1891, ch. 134, §§ 1, 2, 4, 7, 8, § 13 (added).			
1913	157	*All*.....	City court of Buffalo, attachment of property and compensation of marshals, amending L. 1909, ch. 570, § 20, subd. 10, §,53			
1913	158	*All*..... All......	City of Binghamton, appropriations for hospital purposes, amending L. 1907, ch. 751, § 74.	....	...	
1913	160	*All*.....	City of Utica, local improvements, amending charter, L. 1862, ch. 18, § 99.			
1913	161	*All*.....	State College of Forestry at Syracuse University, objects and purposes, amending L. 1911, ch. 851, § 2, subd. 1.			
1913	164	*All*.....	Village of Saratoga Springs, commissioner of parks apply moneys received for mineral water rights to improvements, amending L. 1866, ch. 220, § 94-a (added).			
1913	165	*All*.....	Campaign badges for officers and enlisted men who served in army and navy of the United States during Spanish, Philippine and China campaign, and making appropriation therefor.			
1913	169	*All*.....	Village of Saratoga Springs, moneys to be raised for village purposes, amending charter, L. 1866, ch. 220, § 54, subds. 4-a, 9, 10, 11 (added).			
1913	170	*All*......	Town and village of Saratoga Springs, tax sale certificates, amending L. 1880, ch. 68, § 9 (added).			
1913	171	*All*.....	Village of Saratoga Springs, legal expense fund, amending charter, L. 1866, ch. 220, § 12, § 54, subd. 4-a (added).			
1913	172	*All*.....	Receiver of taxes and assessments of town and village of Saratoga Springs authorized to transfer to village fund certain moneys in the Adirondack Trust Company.			

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Statutes				**Amended or otherwise affected by**			**Expressly repealed by**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1913	174	*All*	City of Oneida, payment of claims, amending charter, L. 1911, ch. 648, § 236 (added).						
1913	178	*All* All	Village of White Plains, street improvement	....	...	....	1915	356	307
1913	184	*All*	Legalizing acts and proceedings to dissolve the incorporation of the village of St. Regis Falls.						
1913	186	*All*	Appropriation for completing the construction of Buffalo State Normal and Training School.						
1913	188	*All*	United States authorized to acquire certain described land in the borough of Queens, city of New York, for life saving station.						
1913	189	*All*	New York Interstate Bridge Commission changed in name to "New York State Bridge and Tunnel Commission," amending L. 1910, ch. 459, § 1.						
1913	190	*All* 2	Appropriation to aid in the celebration of the 100th anniversary of the battle of Lake Erie, and for erection of memorial to Commodore Perry and his men.	1915	437				
1913	191	*All*	Care and investment of the Adam Haverling school fund, town of Bath, Steuben county, amending L. 1910, ch. 592, § 2.						
1913	193	*All*	Incorporating Mount Vernon Masonic Guild.						
1913	217	*All* All	Acquisition and preservation of the historic house and grounds of General Nicholas Herkimer, in town of Danube, Herkimer county and making appropriation therefor.	....	...	....	1918	198	2
1913	218	*All*	Common council of city of Oneonta authorized to pay extra compensation to certain city officers for year 1913.						
1913	219	*All*	Town board of town of Mooers, Clinton county, authorized to convey lands for cemetery purposes.						
1913	220	*All*	Surveys for the improvement of the canal system and making appropriation therefor.						

The italicised matter following each chapter number indicates the part of su private and local in its operation.

Statutes				Amended or ot wise affected	
Law	Ch.	§	Subject and Disposition	Law	Ch.
1913	222	*All*.....	Nyack fire department, funds and distribution thereof, amending L. 1887, ch. 107, § 8.		
1913	224	*All*.....	Commissioners of the home of the city and town of Newburgh authorized to purchase adjoining lands.		
1913	225	*All*.....	City of New Rochelle, board of public works, amending charter, L. 1910, ch. 559, §§ 12, 271–273.		
1913	226	*All*.....	Hospitals, asylums, and other institutions and religious and charitable societies or corporations in New York city exempted from payments for water and from water assessments, amending L. 1887, ch. 696, §§ 1, 2.		
1913	227	*All*.....	Practice of midwifery by others than physicians in the city of Syracuse, regulated and restrained.		
1913	237	*All*.....	Board of supervisors of Westchester county authorized to pay as county charge, certain sums of money deposited with county treasurer in the Erubree action in supreme court.		
1913	239	*All*.....	Reappropriating unexpended balance for Saratoga Springs state reservation.		
1913	240	*All*.....	Reappropriating certain unexpended balances for same objects and purposes as stated in the provisions for the original appropriations.		
1913	242	*All*.....	Navigation on portion of Oswego canal suspended during year 1913 in order to expedite work of improvement.		
1913	243	*All*.....	Providing for the retention and maintenance of portions of the present Champlain and Erie canals in counties of Saratoga and Albany for navigation purposes.		
1913	244	*All*.....	Reappropriating unexpended balance for proper terminials and facilities for barge canal traffic.		
1913	245	*All*.....	Mohawk river and West Canada creek improvements, additional appropriation, amending L. 1911, ch. 132, § 3-a (added).		

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1913	245	*All*.....	Construction of bridge over Black river and Moose river at Lyons Falls, in county of Lewis, appropriations and reappropriations therefor.						
		All......		1915	699[1]				
1913	252	*All*.....	Certain highway in Putman county, amount to be raised annually for maintenance, amended L. 1858, ch. 138, § 2.						
1913	255	*All*.....	Village of Mohawk, Weller library commission, amending charter, L. 1844, ch. 157, § 17, subd. 25.						
1913	258	*All*.....	Construction of shaft and operation of an elevator connecting Fort Washington avenue and a tunnel street from Bennett avenue to Riverside Drive, in city of New York.						
1913	259	*All*.....	Greater New York charter, powers of commissioners of sinking fund, amending L. 1901, ch. 466, § 205.						
1913	261	*All*.....	Appropriation for improvement of mechanical and other structures and works on and connected with canals of state.						
1913	262	*All*.....	Appropriation for state's proportion of amounts appropriated for repairs of highways.						
1913	263	*All*.....	Village of Mechanicville, powers and duties of public park commission, amending L. 1901, ch. 45, tit. and §§ 4, 5.						
1913	264	*All*.....	Village of Mechanicville, funds and obligations, amending charter, L. 1891, ch. 106, tit. 5, § 3, subd. 30, tit. 5, § 3, subd. 31, tit. 7, § 15.						
1913	266	*All*.....	County of Bronx, commissioners of jurors and expenses of office, amending L. 1912, ch. 548, §§ 4, 8.						
1913	268	*All*.....	Board of trustees of foreign parishes of the Protestant Episcopal Church in the United States may fill vacancies in board.						
1913	269	*All*.....	Jurisdiction conferred upon county court of Ontario county over cases involving offenses against children under sixteen years of age.						

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[1] Reappropriation.

The italicised matter following each chapter number indicates the part of suc private and local in its operation.

Statutes				Amended or othe wise affected b		
Law	Ch.	§	Subject and Disposition	Law	Ch.	
1913	270	*All*.....	Conferring jurisdiction upon county court of Ontario county in matters relating to children.			
1913	271	*All*.....	Corporate existence of German American Brewing Company of Buffalo revived and extended.			
1913	274	*All*.....	Boathouse, shelters, wharves and retaining wall in city of Buffalo for naval militia, appropriation by state, amending L. 1912, ch. 160, § 2.			
1913	276	*All*.....	Park board in the city of Utica, powers of board, amending L. 1907, ch. 351, § 3a (added).			
1913	280	*All*..... All.....	State department of efficiency and economy established....	....	...	.
1913	281	*All*..... All.....	State board of estimate established....................	....	...	.
1913	282	*All*.....	City of Oswego, sewers and sewage disposal plants and issuance of bonds, amending charter, L. 1895, ch. 394, §§ 330a, 330k, § 330l (added).			
1913	283	*All*.....	Corporation known as Christ Church, Rochester, authorized to take and hold real and personal property as an endowment fund.			
1913	285	*All*.....	City of Troy authorized to provide funds to pay for public improvements.			
1913	287	*All*.....	City of Utica, collection of taxes, amending L. 1865, ch. 659, §§ 2, 4, 7, §§ 5, 6 (repealed).			
1913	288	*All*..... 3, 4.....	City of Troy authorized to borrow money for water works department, and to issue bonds.	....	...	.
1913	289	*All*.....	Comptroller of city of New York authorized to set aside sale of building to William Shanley and refund certain moneys.			
1913	290	*All*.....	Continuance of work of mapping certain canal lands and lands adjacent thereto authorized, and making appropriation.			
1913	291	*All*.....	Treasurer of county of Steuben authorized to extend the time of collection of taxes in the city of Hornell.			

pter number indicates the part of such chapter treated as special,

	Amended or otherwise affected by			Expressly repealed by		
and Disposition	Law	Ch.	§	Law	Ch.	§
office of commis- harities and correc- county of Erie.						
nd Hudson River Society authorized in its houses minors est and before trial, g L. 1902, ch. 261,						
tion for construction evard and viaduct in of Albany, connecting ree, in town of Beth- with Delaware avenue of Albany.						
Buffalo authorized to sh a fund for the insur- of buildings and other ty owned by city.						
of sheriff of Oneida y, and care and mainte- of jails and prisoners, ding L. 1898, ch. 321, 4.						
New York charter, ex- itures for relief of blind, nding L. 1901, ch. 466, 30, ¶ 3, 676.						
of White Plains, bond e, village engineer, pur- es for tax levy, amending rter, L. 1867, ch. 518, tit. §§ 18, 19; tit. 4, §§ 1, 8.	....	...	....	1915	356	
daga county, filing state- nt of unpaid taxes by unty treasurer, amending 1867, ch. 858, § 1.						
ter New York charter, eads of departments may hear charges, amending L. 901, ch. 466, § 1543b added) .						
y of Utica, extension of boundaries by annexing thereto part of town of New Hartford.	1915	532				
ity of Buffalo, attorney's compensation and lien therefor in city court, amending L. 1909, ch. 570, § 57 (added).						
Chautauqua county clerk, monthly statement of fees, amending L. 1890, ch. 547, § 5.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1913	311	*All*.....	Appropriation for expenses in the enforcement of the fire provisions of the Conservation Law.						
1913	312	*All*.....	Appropriation for the erection of state armory and stable in city of Buffalo and authorizing Erie county to convey county lands for a site.						
1913	313	*All*.....	Incorporation of the New York Commercial Tercentenary Commission.						
1913	314	*All*..... All......	City of Hudson, bond issue for school buildings, furniture, and equipment, amending charter, L. 1895, ch. 751, § 151.	....	...	....	1917	786	6
1913	315	*All*.....	Court house in county of New York, compensation of commissioners, amending L. 1903, ch. 336, § 7.						
1913	316	*All*.....	Village of Weedsport authorized to remove remains of deceased persons from the old cemetery of burial ground in said village.						
1913	321	*All*.....	Greater New York charter, nautical school may be established, amending L, 1901, ch. 466, § 1157.						
1913	322	*All*.....	State nautical school established and to be maintained, appropriation.						
1913	323	*All*.....	Appropriation for construction of poultry building on the state fair grounds at Syracuse.						
1913	324	*All*.....	Greater New York charter, department of taxes and assessments, amending L. 1901, ch. 466, §§ 888a, 891a, 889a (added), §§ 895, 897.						
1913	326	*All*.....	Greater New York charter, sales of tax liens, amending L. 1901, ch. 466, § 1027.						
1913	327	*All*.....	Greater New York charter, plans for water front, amending L. 1901, ch. 466, § 819.						
1913	328	*All*.....	Greater New York charter, acquisition of wharf property, amending L. 1901, ch. 466, § 822.						
1913	329	*All*.....	Greater New York charter, playgrounds, amending L. 1901, ch. 466, §§ 439, 442, 970.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1913	330	*All*.....	Confirming an agreement between city of New York and the Long Island Railroad company providing for elimination of grade crossings on certain streets in borough of Queens.						
1913	331	*All*.....	Greater New York charter, transfer of jurisdiction and control of streets, amending L. 1901, ch. 466, § 243a (added).						
1913	332	*All*.....	Protecting waters of New York bay and vicinity against pollution, termination of commission, amending L. 1906, ch. 639, § 5.						
1913	333	*All*.....	Greater New York charter, powers of board of aldermen, amending L. 1901, ch. 466, § 610.						
1913	336	*All*.....	Village of Peekskill authorized to issue bonds for construction of jail, police court and police headquarters; repealing L. 1911, ch. 735.						
1913	338	*All*.....	Saint Peter's church of city of Albany authorized to transfer endowment fund.						
1913	339	*All*.....	State College of Forestry at Syracuse University, management and control, amending L. 1911, ch. 851, § 3.						
1913	343	*All*.....	City of Buffalo issue bonds for improvements along Scajaquada creek.						
1913	347	*All*.....	Appropriation for the Panama-Pacific exposition commission.[1]						
1913	350	*All*..... All......	Acquisition and equipment of land for military and naval purposes and making an appropriation therefor.[1]	1914	273[2]				
1913	353	*All*.....	Authorizing the laying out and opening of a public street in the village of Sidney, Delaware county through certain cemetery lands.						
1913	358	*All*.....	Reappropriating unexpended balance for terminals and facilities for barge canal traffic.						

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[1] Commission created L. 1912, ch. 541.

[2] Reappropriating unexpended balances.

The italicised matter following each chapter number indicates the part of su private and local in its operation.

Statutes				Amended or ot wise affected	
Law	Ch.	§	Subject and Disposition	Law	Ch.
1913	359	*All*.....	Reappropriating unexpended balance for construction or improvement of public highways.		
1913	360	*All*.....	Reappropriating unexpended balance for construction of state routes two and six.		
		All......		1915	683[1]
1913	361	*All*.....	Reappropriating unexpended balance for Saratoga Springs state reservation.		
1913	362	*All*.....	Reappropriating unexpended balances for the purpose of construction and improvement of portions of state routes within several counties of the state.		
1913	363	*All*.....	Reappropriating unexpended balance for construction of bridge in the Allegany Indian Reservation.		
1913	364	*All*.....	Submission of proposition to electors of Jefferson county for erection of soldiers and sailors' memorial hall in city of Watertown.		
1913	365	*All*.....	Reappropriating unexpended balances for improvement of Cayuga and Seneca canals.		
1913	370	*All*.....	Certain maps of lands in and near city of Syracuse not to be filed in Onondaga county clerk's office unless map has written approval of city engineer.		
		All......		1915	245[2]
1913	371	*All*.....	Charter city of Canandaigua.		
		9, 12....	[Previous charter (village), L.	1915	609
		13......	1893, ch. 666.].............	1915	609
		13......	....	1916	520
		13......	....	1918	480
		30, 36, 51, 56, 58, 64, 65, 69, 73, 78, 79, 90, 96, 102, 116	....	1915	609
		123.....	....	1916	520
		135, 136, 140, 141, 143	....	1915	609
		144, 145.	....	....	...
		146 (renumbered 144)	....	1915	609
		147.....	....	....	...
		148 (renumbered 145)	....	1915	609
		149–152 (renumbered 146–149)	....	1915	609
		156, 165, 185	....	1915	609
		240.....	....	1916	520
1913	372	*All*.....	Inferior criminal courts act in the city of New York, magistrates' courts, amending generally, L. 1910, ch. 659.		

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[1] Reappropriation.

[2] Filing in county clerk's office legalized.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1913	373	*All*.....	Office of sheriff of city and county of New York, appointment of chief clerk, amending L. 1890, ch. 523, § 1.						
1913	376	*All*.....	School district number six in town of Lyons, Wayne county, boundaries, amending L. 1907, ch. 459, § 1.						
1913	380	*All*.....	Abandonment of Edmund cemetery in town of Bolton, Warren county, and removal and reinterment of bodies provided for.						
1913	381	*All*.....	Board of trustees of New York State Hospital for Treatment of Pulmonary Tuberculosis at Ray Brook, Essex county, grant for school purposes one acre of land.						
1913	382	*All*.....	Eastchester in county of Westchester authorized to issue bonds to raise funds for the purchase of motor hook and ladder truck.						
1913	383	*All*.....	Office of sheriff of St. Lawrence county, maintenance and operation of jail, amending L. 1900, ch. 324, §§ 8, 11.[1]						
1913	385	*All*.....	Transfer of certain tracts of land from county of St. Lawrence to county of Franklin and changing the dividing line between such counties.						
1913	386	*All*..... All......	Municipal court in city of New York, when appeal may be taken, amending L. 1902, ch. 580, § 310.	....	...	....	1915	279	184
1913	388	*All*..... All......	Hudson river connecting railroad corporation authorized to construct bridge across the Hudson river between Castleton and Schodack Landing.	....	...	....	1917	713	
1913	391	*All*.....	Grosvenor Library of city of Buffalo, powers of trustees, amending L. 1859, ch. 239, § 2.						
1913	396	*All*.....	Office of sheriff of Rockland county, salaries, allowances and expenses, amending L. 1905, ch. 265, §§ 2, 4, 8, 9.						
1913	401	*All*.....	Office of district attorney of Kings county, clerks, amending L. 1896, ch. 772, § 3.						

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[1] § 11 was left unamended by L. 1913, ch. 383.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1913	404	*All*.....	Jurisdiction conferred upon court of claims to determine the claim of Emma L. Hood, for damages for appropriation of lands and the removal of buildings therefrom by state of New York.						
1913	406	*All*.....	Repealing § 2, L. 1883, ch. 496, salary of county treasurer of Erie county.						
1913	407	*All*.....	Application of consolidated laws in respect to the support of the poor in Orange county, amending L. 1911, ch. 876, § 2.						
1913	409	*All*.....	Village of Mechanicville, Saratoga county, compensation of president and trustees, amending L. 1891, ch. 106, tit. 3, § 5 (added).						
1913	411	*All*.....	Greater New York charter, construction of wharf structures, and repairs thereto, amending L. 1901, ch. 466, § 821, § 821a (added).						
1913	413	*All*.....	Commission created to dedicate monument erected by state of New York, at Andersonville, Ga., to commemorate soldiers and making appropriation therefor.						
1913	414	*All*.....	Enabling the state of New York to furnish the United States the right of way necessary for rectification of the bend in Harlem River Ship Canal and making an appropriation therefor, amending L. 1876, ch. 147, §§ 13–16 (added).						
1913	415	*All*.....	Establishing a state commission for improving the condition of the blind of the state, and making an appropriation therefor....................						
		4, 5, 7...		1915	363				
		8........		1916	118				
		9........		1915	363				
		9a (added)		1917	302				
1913	417	*All*.....	Commissioners of the sanitary trunk sewer in Westchester county may authorize use of sewer, terms of commissioners extended, amending L. 1905, ch. 646, § 17.						
1913	418	*All*.....	Greater New York charter, commissioners of deeds, amending L. 1901, ch. 466, § 58.						

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1913	420	*All*.....	Control of Blauvelt rifle range in county of Rockland conferred upon commissioners of the Palisades Interstate Park.						
1913	427	*All*.....	School district number one of the town of Seneca, Ontario county, changed to Geneva high school district and made a union free school district; repealing L. 1853, ch. 252; L. 1855, ch. 357; L. 1869, ch. 43; L. 1870, ch. 9.						
1913	430	*All*.....	Deepening and widening of the channel of the Peconic river from Indian island to Riverhead town dock in county of Suffolk.						
1913	435	*All*.....	Appropriating moneys for purposes of the Commissioners of State Reservation at Saratoga Springs, and for acquisition of additional property.						
1913	438	*All*.....	Commissioner of jurors, claims for exemption within county of Queens, amending L. 1899, ch. 441, § 9.						
1913	449	*All*.....	Holding trial terms of the Supreme Court in the city of Olean, amending L. 1902, ch. 274, § 1.						
1913	452	*All*.....	Repealing an act incorporating the Long Sault Development Company, L. 1907, ch. 355, and making an appropriation to repay to such company certain money paid by it to the state.						
		2, re-enacted..		1917	636				
1913	453	*All*.....	Jurisdiction upon Board of Claims to determine alleged claims of Long Sault Development Company by reason of repeal of incorporation.[1]						
1913	468	*All*.....	United States authorized to occupy certain lands for purposes of lighthouse situate near the city of Kingston in county of Ulster.						
1913	471	*All*.....	Commission appointed by mayor of New York city to prepare a codification of the practice and procedure in the municipal court of the city of New York.						
		1.......		1914	9				

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[1] Incorporation repealed, L. 1913, ch. 452.

The italicised matter following each chapter number indicates the part of such chapter treated as special private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1913	473	*All*	Acquisition of lands for right of way and other purposes in construction of county roads in certain counties adjoining cities of first class, amending L. 1910, ch. 564, § 4 renumbered § 5, new § 4 added.						
1913	478	*All*	Incorporating the Metropolitan Baptist Union.						
1913	481	*All*	Charter city of Rensselaer.						
		250–257	[Previous charter, L. 1897, ch.				1917	786	
		All	359; subsequent charter, L.				1915	69	
		All	1915, ch. 69.]	1913	609[1]				
1913	488	*All*	Incorporating the Rockefeller Foundation.						
1913	507	*All*	Incorporating the city of Salamanca						
		4, subd. 3		1917	716				
		10, 11, 13, subd. 1		1917	716				
		14–16, 24, 26, 36		1917	716				
		43, subd. 6		1917	716				
		43, subd. 10 (added)		1917	716				
		47, 49, 1st par. and subds. 13, 19, 21, 24		1917	716				
		50		1916	414				
		53, 58, 59, 61, 62, subds. 2, 3		1917	716				
		64		1915	397				
		64		1917	716				
		65, 1st par. and subds. 1–3		1917	716				
		65, subds. 4–7 (added)		1917	716				
		67, 76, 77, 79, 82, 91–95, 101–103		1917	716				
		113		1916	414				
		127					1917	786	
		128		1917	716				
		128–139					1917	786	
		140		1917	716				
		140–142					1917	786	
		150, subd. 3		1916	414				
		157		1916	414				
		175, 176, 178, 180–182, 206		1917	716				
		All		1914	427[2]				
1913	510		Rapid Transit Act, easements acquired and reserved for construction of railroads, amending L. 1891, ch. 4, § 20.						
1913	513	*All*	Council of administration, corps membership and organization of the Society of the War of Eighteen Hundred and Twelve, amending L. 1895, ch. 91, §§ 16–18 (added).						
1913	515	All	Appropriation to repair damage done by floods to Barge Canal system.						

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[1] Payments to injured volunteer firemen.

[2] Certificates of indebtedness issued by common council legalized.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1913	516	*All*	Appropriation to repair damage done by floods to canals of the state.						
1913	518	*All*	Boundaries of city of Utica extended by annexing thereto part of town of Deerfield; referendum.						
1913	521	*All*	Water front facilities of the city of New York in relation to receipt, delivery and shipment of freight improved, amending generally, L. 1911, ch. 776.						
1913	524	*All*	Relocation of a railroad in cities of over one million inhabitants, amending rapid transit act, L. 1891, ch. 4, § 24a (added), § 39, subd. 1.						
1913	525	*All*	Repealing L. 1896, ch. 372, relative to elevated railways on Adams street in city of Brooklyn.						
1913	531	*All*	Legalizing the proceedings in the matter of the issuance of bonds of the village of Ilion for paving streets.						
1913	532	*All*	Commission created for a celebration in New York city to commemorate the fiftieth anniversary of the emancipation proclamation and making an appropriation therefor.						
1913	534	*All*	City of New York, salaries of the members of the supervising and teaching staffs of the board of education, amending charter, L. 1901, ch. 466, § 1091.						
1913	539	*All*	Charter city of Beacon.[1] [Formerly village of Matteawan and village of Fishkill Landing.]						
		13, 17, 18		1915	547				
		21		....	...	....	1915	547	2
		21 (added)		1915	547				
		29		1915	547				
		36		....	...	....	1915	547	4
		36 (added)		1915	547				
		46		1915	547				
		66		....	...	....	1915	547	
		66 (added)		1915	547				
		88		1915	547				
		102		....	...	....	1917	786	6
		114a (added)		1915	547				
		115 (renumbered 130)		1915	547				
		Tit. 8, §§ 115–128 (added)		1915	547				
		All		1915	710[2]				

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[1] City of Beacon consists of villages of Matteawan and Fishkill Landing.

[2] Improvement of drainage from Mattewan hospital lands.

The italicized matter following each chapter number indicates the part of such cl private and local in its operation.

Statutes				Amended or otherwise affected by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§
1913	540	*All*.....	Rapid transit railways, damages for change of grade of streets, amending L. 1891, ch. 4.			
1913	541	*All*.....	Terms and appointment of trustees of the Queens borough public library of the city of New York, amending L. 1907, ch. 164, § 3.			
1913	546	*All*.....	Appropriation for payment of state's share of expense of acquiring the bridge crossing the Hudson river between counties of Saratoga and Rensselaer.			
1913	547	*All*.....	Appropriation for payment of state's share of the expense of acquiring bridge crossing the Hudson river between counties of Albany and Rensselaer.			
1913	548	*All*.....	Appropriation for payment of the expense of acquiring the union bridge crossing the Hudson river between counties of Saratoga and Rensselaer.			
1913	549	*All*.....	Appropriations for reconstruction of state capitol; construction and decoration of state education building; construction of capitol power house; repairs of the assembly chamber.			
1913	550	*All*..... All......	New York battlefields commission for the battlefields of Gettysburg, Chattanooga and Antietam instituted, supplementing L. 1895, ch. 317, L. 1912, ch. 227.	1917	736[1]	
1913	553	*All*.....	Office of commissioner of jurors of county of Rensselaer abolished and conferring his powers and duties on the county clerk.			
1913	564	*All*.....	Trustees of the Young Men's Association for Mutual Improvement in the city of Albany, amending L. 1907, ch. 212, § 3.			
1913	575	*All*.....	Village of Albion, powers of board of trustees as to improvements, amending L. 1879, ch. 142, tit. 9, § 2.			

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[1] Monument to 79th regiment.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1913	576	*All*	Deputy commissioner of parks in the village of Saratoga Springs, amending charter, L. 1866, ch. 220, §§ 86, 87, 93.						
1913	577	*All*	Time in which to file claims with board of assessors of city of New York for damages sustained by owners of real property fronting upon streets approaching Manhattan bridge over East river, amending L. 1911, ch. 737, § 1.						
1913	578	*All*	Issuance and sale of bonds for the erection of high school building in town of German Flats, Herkimer county, legalized.						
1913	580	*All*	Trial by jury in the city court of Buffalo, amending L. 1909, ch. 570, § 41.						
1913	581	*All*	Appeals in the city court of Buffalo, amending L. 1909, ch. 570, § 55.						
1913	584	*All*	Boundaries of the Nineteenth ward in the city of Albany, amending charter, L. 1883, ch. 298, tit. 2, § 1.						
1913	585	*All*	Testimony of witnesses in the city court of Buffalo, amending L. 1909, ch. 570, § 10.						
1913	588	*All*	Commission to inquire into subject of pensions or other relief for widowed mothers and appropriation therefor.						
1913	589	*All*	Unpaid taxes in town of Ohio, Herkimer county added to assessment-roll for 1913 and a relevy and collection made.						
1913	601	*All*	Drawing of juries and changing punishments in city court of Buffalo, amending L. 1909, ch. 570, §§ 52, 74.						
1913	602	*All*	Time of completion of the railway of the Ithaca-Cortland Traction Company extended.						
1913	604	*All*	Making appropriation for additional land for the New York State Custodial Asylum, amending L. 1911, ch. 822, § 1.						
1913	609	*All*	Payments to injured or representatives of deceased volunteer firemen in the county of Rensselaer.						

The italicised matter following each chapter number indicates the part of such cha private and local in its operation.

Statutes				Amended or otherwise affected by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**
1913	610	*All*.....	Certain lands in the city of Oswego vested in the Fort Oswego Chapter, Daughters of the American Revolution, and to be known as Montcalm Park.			
1913	611	*All*.....	Personal property and estate of Catherine Grimes, late of the city of Albany, released by the state.			
1913	612	*All*.....	Removal of bodies from old Delaware avenue cemetery in the city of Buffalo and sale of the land authorized			
1913	615	*All*.....	Proceedings of the board of supervisors of the county of Schuyler in relation to changing time for holding town meetings legalized.			
1913	616	*All*.....	Conveyance of lands under water to the owners of the adjacent uplands in the sea wall and Hamburg turnpike contracts.			
1913	622	*All*.....	Canal board empowered to consent to discontinuance and abandonment of portion of highway in town of La Fayette, Onondaga county.			
1913	624	*All*.....	Deepening of the channel of Ellicott creek from Erie canal to the city line of city of Tonawanda and making an appropriation therefor			
		All.....		1917	760[1]	
		All.....		1918	85[2]	
1913	625	*All*.....	Establishing a commission on sites, grounds and buildings for state institutions.			
1913	634	*All*.....	Incorporating the Eastern Association School.			
1913	635	*All*.....	Certain real estate in town of Yonkers, county of Westchester, released to Charles W. Dayton, Jr., and Victor J. Dowling as executors of the last will and testament of Charles W. Dayton, deceased.			
1913	636	*All*.....	Appropriation for state's share of expense of maintaining county roads.			
1913	638	*All*.....	Custodian of primary records of county of Oneida authorized to correct and complete the enrollment and enrollment books in certain election districts.			

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[1] Additional appropriation [2] Improvement of Ellicott Creek.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1913	640	*All*	Mount Sinai Alumnae Association authorized to maintain a pension fund for benefit of its members.						
1913	641	*All*	Reservations in a deed of John Wheeler and Philip A. Deyo, as assignees of Thomas F. Morris and Joseph H. Anderson and others to Frederick A. Cole may be deemed to apply to any portion of the property conveyed.						
1913	643	*All*	Report of the unveiling of the monument to be erected in commemoration of the centenary of the birth of Horace Greeley and making an appropriation therefor.						
1913	644	*All*	Appointment of commissioners to confer with commissioners of other states in reference to motor vehicle legislation, and making an appropriation therefor.						
1913	646	*All*	Appropriation for maintenance and repair of public highways.						
1913	647	*All*	Appropriation for highway improvement purposes.						
1913	650	*All*	Bond issue authorized for construction and improvement of highways in Franklin county.						
1913	651	*All*	Authorizing the incorporation of "The Sisters of Charity of Plattsburgh, New York," under Membership Corporation Law.						
1913	652	*All*	Incorporating Students' Aid Society of the Yonkers High schools.						
1913	653	*All*	Providing for the adoption of a system for uniform text books in the schools in St. Lawerence county.						
1913	654	*All*	Repair of west pier at the foot of Owasco lake and dredging Owasco outlet and making an appropriation therefor.						
1913	655	*All*	Corporate existence of the Enterprise Land Company extended, amending L. 1911, ch. 289, § 1.						
1913	656	*All*	Certain general statutes relating to taxation not to affect the collection of taxes in the several towns of Westchester county.						

The italicised matter following each chapter number indicates the part of such ch private and local in its operation.

Statutes				**Amended or otherwise affected by**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**
1913	657	*All*.....	Acquisition of a farm site for the hygienic and antitoxin laboratories of the state department of health and making an appropriation therefor.			
1913	659	*All*.....	City of Rochester, boundaries extended, amending charter, L. 1907, ch. 755, §§ 3, 383, 631, 636			
		1, part amending § 383, subd. 7..........		....	...	...
1913	660	*All*.....	Establishing and maintaining water department in city of Elmira.			
		2, 15....		1915	660	
1913	661	*All*.....	Moneys constituting the police pension fund in the village of White Plains, amending L. 1911, ch. 666, § 2, subd. 8 (added).			
		All.....		....	...	..
1913	667	*All*.....	Certain religious corporations merged into one religious corporation by the name of the First Presbyterian Church of Jeffersonville, New York.			
1913	668	*All*.....	National Association of Stationary Engineers authorized to hold annual meetings and have principal place of business outside of the state.			
1913	669	*All*.....	Powers and objects of Conrad Poppenhusen Institution, in village of College Point, amending L. 1868, ch. 667, §§ 1, 3, 9, 10, 12.			
1913	671	*All*.....	City of Troy, assessment bonds, amending charter L. 1892, ch. 670, tit. 4, § 14.			
1913	672	*All*.....	Construction of a wall and fence about the birthplace and homestead of the late Governor Samuel J. Tilden.			
1913	673	*All*.....	Authorizing the preparation of an index of the session laws and statutes of the state of New York.			
		All......		....	..,	
1913	674	*All*.....	Appropriation for payment of principal and interest on debt for the Saratoga Springs state reservation.			
1913	675	*2*.......	Appropriation for establishment of state school of agriculture and domestic science at Delhi, Delaware county.			
1913	677	*All*.....	Appropriation for erection of buildings for New York State College of Forestry at Syracuse University.			

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1913	678	*All*.....	Authorizing the state commission in lunacy to surrender to the city of New York a lease of certain premises situate in the borough of Manhattan in city of New York.						
1913	679	*All*.....	Punishment for criminal contempt, amending inferior criminal courts act of New York city, L. 1910, ch. 659, § 31, subd 5 (added).						
1913	680	*All*.....	Greater New York charter, duties of city officials respecting assessment rolls, amending L. 1901, ch. 466, § 910.						
1913	681	*All*.....	Greater New York charter, tax liens, amending L. 1901, ch. 466, §§ 1038, 1043, 1044.						
1913	682	*All*.....	Greater New York charter, transfer of tax liens, amending L. 1901, ch. 466, § 1030.						
1913	683	*All*.....	Greater New York charter, notifying taxpayers of assessments, amending L. 1901, ch. 466, § 1023a.						
1913	684	*All*.....	Greater New York charter, payment of assessments in installments, amending L. 1901, ch. 466, § 1019a.						
1913	685	*All*.....	Greater New York charter, interest charged on assessments unpaid, amending L. 1901, ch. 466, § 1019.						
1913	686	*All*.....	Greater New York charter, board of city record may designate newspapers, amending L. 1901, ch. 466, § 1526.						
1913	687	*All*.....	Greater New York charter, inspectors and officers of health department declared to be peace officers, amending L. 1901, ch. 466, § 1264.						
1913	688	*All*..... All	Greater New York charter, trials of members of the supervising and teaching staffs, amending L. 1901, ch. 466, § 1093.	....	...	....	1917	786	6
1913	689	*All*.....	Inferior criminal courts act of the city of New York, powers of the clerk, amending L. 1910, ch. 659, § 74.						

The italicized matter following each chapter number indicates the part of such ch
private and local in its operation.

Statutes				Amended or otherwise affected by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§
1913	690	*All*..... All......	Municipal court of the city of New York, jury trials in the boroughs of Queens and Richmond, amending L. 1902, ch. 580, § 231b (added).	....	...	...
1913	691	*All*.....	Inferior criminal courts act of New York city, examination, and commitment of mentally defective and feeble-minded children, amending L. 1910, ch. 659, § 39a (added).			
1913	692	*All*..... All.....	Municipal court of city of New York, return of jury and juror's fees, amending L. 1902, ch. 580, § 351a (added).	....	...	..
1913	693	*All*.....	Comptroller of the city of New York authorized to compromise and settle claims for unpaid taxes levied in former county of Queens.			
1913	694	*All*.....	Greater New York charter, suspension of officers and employees in city departments, amending L. 1901, ch. 466, § 1569a (added).			
1913	695	*All*.....	Greater New York charter, providing for the prevention of fires, amending L. 1901, ch. 466, §§ 774, 775, subds. 2, 3, § 777, § 775a (repealed).			
1913	696	*All*.....	Terms and conditions of the lease by New York city of Ward's Island to the state, amending L. 1908, ch. 139, § 1.			
1913	697	*All*.....	Greater New York charter, destruction of useless records, amending L. 1901, ch. 466, § 1545a (added).			
1913	698	*All*.....	Greater New York charter, records in fire department, amending L. 1901, ch. 466, § 727.			
1913	700	*All*.....	Incorporating the Bath Beach Hebrew Free Loan Association.			
1913	701	*All*.....	Acquisition of lands for a public park near capitol and state education building and making appropriation for preliminary expenses.			
1913	702	*All*.....	Celebration of one hundredth anniversary of birth of Samuel J. Tilden and making appropriation therefor.			

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1913	703	*All*.....	Reappropriation for surveys, estimates and plans for improvement of certain portions of the Black river in Jefferson county.						
1913	704	*All*.....	Replanking bridge and reconstruction of sluice on highway across the head of Owagena lake in town of Cazenovia, Madison county and making appropriation therefor.						
1913	705	*All*.....	Commission to revise the banking law and making appropriation therefor.						
		1.......		1914	3				
1913	706	*All*.....	Appropriation for improvement of Erie canal, Oswego canal and Champlain canal.						
1913	707	*All*.....	Superintendent of insurance authorized to prepare revision of the insurance law, and making an appropriation therefor.						
1913	708	*All*.....	Procedure for making compensation to persons for property appropriated in connection with the improvement of the canals and construction of barge canal terminal.						
1913	709	*All*.....	Appropriation for the payment of salaries and expenses of counsel, examiners, auditors and assistants in the office of the state comptroller.						
1913	710	*All*.....	Appropriations for purchase of lands, erection and equipment of buildings for New York State School of Agriculture on Long Island.[1]						
1913	711	*All*.....	Construction of foot bridge over Erie canal at Cornelia street, in city of Utica, and making appropriation therefor.						
1913	712	*All*.....	Appropriation for organization and support of farm bureaus in the various counties of the state.						
1913	713	*All*.....	Board of statutory consolidation authorized to prepare a practice act, rules of court and short forms as recommended by said board in its report to the legislature.						

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[1] School of Agriculture established L. 1912, ch. 319.

The italicised matter following each chapter number indicates the part of such ch
private and local in its operation.

Statutes				Amended or otherwise affected by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**
1913	714	*All*	Construction of highway bridge over the canalized Mohawk river at movable dam five and making appropriation therefor.			
1913	715	*All*	Construction of lift or hoist bridge over the Erie canal at West Genesee street in city of Syracuse.			
1913	716	*All*	Bennington battlefield in the town of Hoosic, in county of Rensselaer, acquired and preserved and making an appropriation therefor.			
1913	717	*All*	Provide for the erection of suitable monument to commemorate the services of Twenty-fifth New York Volunteer Cavalry, and making appropriation therefor.			
1913	718	*All*	Appropriation for the purpose of repairing and reconstructing the dikes and repairing the banks of Chemung river in city of Elmira.			
1913	724	*All*	Retirement of justices of municipal court of the city of New York, counties where actions referable limited, amending L. 1911, ch. 846, § 1.			
1913	725	*All*	Appropriation to provide for celebration of fiftieth anniversary of battle of Gettysburg.[1]			
1913	726	*All*	Appropriation for purpose of establishing, maintaining and operating nurseries for propagation of trees and reforesting lands within the state.			
1913	727	*All*	Improvement of tributaries of Black brook in Seneca county and making an appropriation therefor.			
1913	728	*All*	Public dock at Willard, Seneca county repaired and appropriation made therefor.			
1913	729	*All*	Repairs by the state to prevent flooding of state highway, route eighteen, known as Buffalo and Niagara Falls boulevard, and adjacent lands in town of Niagara, and making an appropriation therefor.			

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[1] L. 1912, ch. 227.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1913	730	*All*	Providing for the celebration of the centenary of the battle of Plattsburgh, the appointment of a commission and making an appropriation therefor						
		1		1913	828				
		3, 4		1915	230				
		5		1913	828				
		All		1914	95[1]				
		All		1915	616[2]				
1913	731	*All*	Certain data compiled by commissioner of agriculture relative to farm lands acquired by the state and making an appropriation therefor.						
1913	732	*All*	Removal of an island in Chemung river at Corning and making an appropriation therefor.						
1913	733	*All*	Purchase by armory commission of certain lot of land situate in city of Kingston for armory purposes and making an appropriation therefor.						
1913	734	*All*	Creating a commission to select a site in city of Ogdensburg and construct foundation and pedestal for monument to Brevet Major-General Newton Martin Curtis and appropriation therefor.						
1913	735	*All*	Rebuilding of bridge over old Erie canal at South James street in city of Rome, and making an appropriation therefor.						
1913	737	*All*	Production and the diseases of hops in state of New York investigated and making an appropriation therefor.						
1913	738	*All*	Cuba or Oil Creek reservoir located in county of Allegany and partly in county of Cattaraugus placed under control of conservation commission.						
		All		....	...	....	1917	266	
1913	739	*All*	Providing for the maintenance of Schoharie State School of Agriculture and making an appropriation therefor.						
1913	745	*All*	Construction of bridge over Erie canal in village of Yorkville						
		All		1915	584[3]				
1913	749	*All*	Greater New York charter, changing grades of schools and classes by board of education, amending L. 1901, ch. 466, § 1084.						
		All		....	...	....	1917	786	6

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[1] Powers of commission enlarged.

[2] Acquisition of site for memorial.

[3] Change in plans for construction of bridge.

The italicised matter following each chapter number indicates the part of such c private and local in its operation.

Statutes				Amended or otherwise affected by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**
1913	750	*All*.....	Dredging and straightening the Canisteo river from Hornell to Addison, and making appropriation therefor.			
1913	751	*All*.....	Construction and equipment of buildings for New York State College of Agriculture at Cornell University and making appropriations.			
1913	752	*All*.....	Repealing L. 1896, ch. 803, plumbing in New York city.			
1913	754	*All*.....	Greater New York charter, regulation and registration of plumbers, amending L. 1901, ch. 466, §§ 415, 416 (added).			
1913	755	*All*.....	Greater New York charter, examining board of plumbers, amending L. 1901, ch. 466, tit. 5, §§ 1572–1574 (added).			
1913	757	*All*.....	Preserving waters of Bronx river from pollution, amending L. 1907, ch. 594.			
1913	758	*All*.....	Appropriation for dredging Chadakoin river, known as Chautauqua lake outlet.			
1913	759	*All*..... All......	Appropriation for the use of certain land owned by the state in Ulster county for a game farm.	....	...	.
1913	760	*All*..... 1.......	Establishing a portion of the boundary line between counties of Green and Schoharie and making an appropriation therefor.	1915	510	
1913	761	*All*.....	Appropriation for the erection of a monument in the city of New York to commemorate services of the soldiers of Meagher's Irish Brigade and Corcoran's Irish Legion in the war of the Rebellion.			
1913	762	*All*.....	Acquiring interest in certain lands on Randall's island for New York State Training School for Boys, amending L. 1904, ch. 718, § 7.			
1913	763	*All*.....	County of Kings authorized to release to Andrew Carlson the public uses and trusts affecting certain lands in the town of Smithtown.			
1913	767	*All*.....	Appropriation for the purposes of investigating the cost of providing free text books to all the schools within the state.			

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1913	768	*All*.....	Expenditure of moneys heretofore appropriated for the construction and improvement of certain state highways.						
1913	769	*All*.....	Greater New York charter, stage or omnibus routes to obtain franchises, amending L. 1901, ch. 466, §§ 1458, 1459–1461 (repealed) § 1458 (added).						
1913	771	*All*.....	Application of mortgage recording tax money by chamberlain of city of New York toward expense of changing existing grade crossings in counties of New York, Kings, Queens, Richmond and Bronx.						
1913	775	*All*.....	Incorporating the order of Friars Minor of the Province of the Most Holy Name.						
1913	776	*All*.....	Salaries of assistants in the office of the register of Kings county amending L. 1901, ch. 706, § 2.						
1913	777	*All*.....	Commissioners of the land office authorized to convey to New York Central and Hudson River Railroad Company, a strip of land in town of Poughkeepsie, known as Hudson River state hospital land.						
1913	778	*All*.....	Appropriation for the payment of annuities on account of settlement with the Cayuga nation of Indians.						
1913	780	*All*.....	Providing for erection of state armory and stable in city of Rochester, and making an appropriation therefor.						
1913	781	*All*.....	Providing for the abatement of the smoke nuisance in the city of Albany.						
1913	786	*All*.....	Reappropriation for construction and improvement of state routes within Warren and Essex counties.						
		All......		1915	684[1]				
1913	787	*All*.....	Rate of interest upon certain bonds of the state..........						
		1.......		1915	2				
		All.....	....	1913	805[2]				
		All.....	....	1913	806[3]				

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[1] Reappropriation.

[2] Appropriation to pay interest on canal debt.

[3] Appropriation to pay interest on canal terminals debt.

The italicised matter following each chapter number indicates the part of such ch private and local in its operation.

Statutes				Amended or otherwise affected by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§
		All		1913	810[1]	
		All		1914	271[1]	
		All		1915	729[2]	
		All		1916	642[3]	
1913	788	*All*	Providing for repayment in cities of the first class of surplus of deposits made to secure the restoration of pavements.			
1913	789	*All*	Appropriation for construction, improvements, repairs and equipments at various state institutions.			
1913	790	*All*	Appropriations for constructions, improvements, repairs and equipment at various state institutions.			
1913	791	*All*	Appropriations for expenses of government and supplying deficiencies in former appropriations.[4]			
1913	792	*All*	Appropriations for support of government.			
1913	799	*All*	Acquiring the interest of the state of New York in certain lands on Randall's Island in exchange for certain lands in the city of New York for the New York Training School for Boys, amending L. 1904, ch. 718, § 7.			
1913	801	*All*	Barge canal act, toll bridges, amending L. 1903, ch. 147, §§ 3, 4.			
1913	802	*All*	Appropriation for the court for trial of impeachments.			
1913	803	*All*	Appropriations for certain expenses of government and supplying deficiencies in former appropriations.			
1913	804	*All*	Direct tax for annual contribution to canal sinking funds, barge canal terminals sinking fund, highway improvement sinking funds and Palisades Interstate Park sinking funds.			
1913	805	*All*	Appropriations for payment of interest on the canal debt.			
1913	806	*All*	Appropriation for payment of interest on barge canal terminals debt.			

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[1] Appropriation to highway improvement sinking fund.

[2] Canal debt sinking fund.

[3] Payment of interest on Erie, Champlain and Oswego canal bonds

[4] Unexpended balances reappropriated L. 1914, ch. 521.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1913	807	*All*.....	Appropriation for payment of interest on the Palisades Interstate Park debt.						
1913	808	*All*.....	Appropriation for the payment of interest on the highway improvement debt.						
1913	809	*All*.....	Appropriation for the payment of interest on the highway improvement debt.						
1913	810	*All*.....	Appropriations from the general fund to the highway improvement sinking fund.						
1913	817	*All*.....	Appropriation for carrying out the objects and purposes of the workmen's compensation law.[1]						
1913	818	*All*.....	Membership and organization of the Panama-Pacific international exposition commission, amending L. 1912, ch. 541, § 2.						
1913	819	*All*.....	Providing for the submission to the people the question whether there shall be a convention to revise the constitution and amend the same, and providing for such convention if the proposition is adopted.						
		All.....		1914	261[2]				
		All.....		1915	76[3]				
		All.....		1915	201[4]				
		All.....		1915	338[5]				
1913	823	*All*.....	Publication of legal notices within the county of Bronx, amending L. 1912, ch. 548, § 9a (added).						
1913	824	*All*.....	Grand and trial jurors in the county of Bronx.						
1913	825	*All*.....	County officers and employees and county detectives in the county of Bronx, amending L. 1912, ch. 548, § 3.						
1913	827	*All*.....	Appropriation for the payment and discharge of certain judgments and awards made by the board of claims.						
1913	828	*All*.....	Membership of the Plattsburg centenary commission, amending L. 1913, ch. 730, §§ 1, 5.						
1913	829	*All*.....	City of Binghamton authorized to issue emergency notes for maintaining public schools.						

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[1] Workmen's compensation law, L. 1913, ch. 816.
[2] Appointment of commission.
[3] Meeting of convention.
[4] Commission continued.
[5] Salaries and expenses.

The italicised matter following each chapter number indicates the part of such ch private and local in its operation.

Statutes				Amended or otherwise affected by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§
1913	830	*All*.....	City of Geneva, bond issue for filtration plant legalized.			
1913	831	*All*.....	Appropriations for payment of indebtedness contracted and incurred by executive department, during fiscal year ending Sept. 30, 1913.[1]			
1913	833	*All*.....	Appropriations for payment and discharge of indebtedness contracted, incurred and accumulated from year to year by departments and officers of the state prior to Sept. 30, 1913, in excess of appropriations.			
1913	834	*All*.....	Appropriations for the support of government.			
1913	835	*All*.....	Appropriation for compensation of counsel and other expenses in the matter of the trial of the articles of impeachment against William Sulzer.[1]			
1913	836	*All*.....	Appropriation for payment of counsel of respondent in the matter of trial of articles of impeachment against William Sulzer.			
1913	837	*All*.....	Transferring certain public records from office of register of the county of New York to office of register of the county of Bronx and fixing fees of register of county of Bronx.			
1913	838	*All*.....	Greater New York charter, salaries of teaching staff of board of education, amending L. 1901, ch. 466, § 1091.			
1914	1	*All*.....	City of Watertown, relative to extending time for payment of taxes, amending charter, L. 1897, ch. 760, §§ 178, 179, 180, 181, 185, 187, 189, 190, 213.			
1914	2	*All*.....	Electric City Railway Company, time extended for finishing railroad.			
1914	3	*All*.....	Commission to revise banking law, extending time to report, amending L. 1913, ch. 705.			
1914	4	*All*..... 1.......	City of Watertown, amending charter, L. 1897, ch. 760, §§ 92, 176.	....	...	

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[1] Unexpended balance reappropriated L. 1914, ch. 521.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	7	*All*.....	Commission to remedy conditions of alien insane and making an appropriation therefor.						
1914	8	*All*.....	Greater New York charter, relative to deputies in department of finance, amending L. 1901, ch. 466, § 150.						
1914	9	*All*.....	Commission on the codification of practice and procedure in municipal court, New York city, extending time to report, amending L. 1913, ch. 471, § 1.						
1914	11	*All*.....	Powers of board of trustees of St. James' American Protestant Episcopal Church, Florence, Italy.						
1914	12	*All*.....	Charter village of Deposit, Broome and Delaware counties. [Previous charter, L. 1873, ch. 330.]						
1914	15	*All*.....	Interstate Park, along Palisades of Hudson river, powers of commissioners, amending L. 1900, ch. 170, § 2.						
1914	17	*All*.....	Appropriations for certain expenses of legislature.						
1914	19	*All*.....	Incorporating Pythian Home, objects of corporation amending L. 1893, ch. 249, § 7.						
1914	20	*All*.....	Legalizing certain certificates of nomination to town and village offices.						
1914	22	*All*.....	Reappropriating certain appropriations for support of government.[1]						
1914	23	*All*.....	Ceding certain land to village of Portchester and authorizing the said village to lay out one or more highways thereon, description of land, ceded, amending L. 1911, ch. 518, § 1.						
		All......		1916	29[2]				
1914	24	*All*.....	Police department in village of Portchester, Westchester county, pension fund, amending L. 1903, ch. 285, § 16.						
1914	25	*All*.....	Reviving and extending the corporate existence of the Sidman Land Company, of Buffalo, New York.						

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[1] Unexpended balance reappropriated L. 1914, ch. 521.

[2] Time extended for laying out highways.

The italicised matter following each chapter number indicates the part of such ch private and local in its operation.

Statutes				Amended or otherwise affected by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§
1914	26	*All*.....	Reviving and extending the corporate existence of the Central Land Company, of Niagara Falls, New York.			
1914	27	*All*.....	Legalizing certain acts and proceedings of board of supervisors of the county of Jefferson, relating to tuberculosis hospital.			
1914	30	*All*.....	Incorporating Fireman's Association of state of New York, trustees, amending L. 1873, ch. 434, § 6.			
1914	34	*All*.....	Incorporating the city of Norwich, Chenango county, and repealing L. 1904, ch. 7; L. 1907, ch. 415; L. 1910, ch. 3. [Previous charter (village), L. 1904, ch. 7.]			
		16, 19, 38, 42, 44, 45, 49......		1917	421	
		71, subd. 16.....	....	....	...	
		72, 74, 115, 129, 130, 167, 169, 173, 221, 239, 240.				
		275....	....	1917	421	
		313, subd. 7	....	1915	603	
		313......	....	1917	421	
		334.....	....	1917	421	
1914	33	*All*.....	Maintenance and repair of certain public highways within Letchworth Park, Wyoming county.			
1914	35	*All*.....	Incorporating the Church Extension Society of Rochester.			
1914	36	*All*.....	Releasing interest of state in certain real estate in New York City, to Raoul Dupuy and others, amending L. 1905, ch. 250.			
1914	37	*All*.....	Custodian of primary records of Delaware county to correct and complete the enrollment in the first election district, town of Roxbury.			
1914	42	*All*.....	Cornell University authorized to pay certain legal fees and expenses in action brought by state of New York against Brooklyn Cooperage Company and Cornell University.			
1914	43	*All*.....	Providing for special election in town of Waterford, Saratoga county, to submit propositions for town hall and building commissioners, and repealing L. 1873, ch. 127, L. 1874, ch. 16.			
1914	45	*All*.....	City court of Buffalo, salaries of judges, amending L. 1909, ch. 570, § 5.			

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	46	*All*	Appropriation for commissioners of the state reservation at Saratoga Springs.						
1914	49	*All*	Legalizing acts of board of supervisors of Yates county in making annual allowance to county judge for expenses.						
1914	50	*All*	Schoharie Valley Stock Growers' Association, assessment upon stock, amending L. 1860, ch. 320, § 6.						
1914	53	All	Manhattan Eye and Ear Hospital, changing name to "Manhattan Eye, Ear and Throat Hospital and Medical School," amending L. 1869, ch. 584, §§ 1, 2.						
1914	57	*All*	Town of Franklin, county of Franklin, rejected taxes to be relevied.						
1914	58	*All*	City of Schenectady, city and ward boundaries, including portions of the towns of Rotterdam and Niskayuna, amending charter, L. 1907, ch. 756.						
1914	65	*All*	Village of Ossining, moneys to be raised annually by taxation, amending charter, L. 1910, ch. 667, § 59.						
1914	68	*2*	Appropriation for construction of new state route in county of Greene, employment of convict labor, amending L. 1913, ch. 784, § 2.						
1914	71	All	Incorporating the Joint Commission of the Protestant Episcopal Church in the United States of America to arrange for a world conference on faith and order.						
1914	73	*All*	Abolishing department of public charities and corrections in New York city and establishing department of public charities and department of correction, buildings on Blackwell's Island, amending L. 1895, ch. 912, § 7.						
1914	74	*All*	Incorporating the Council of Young Men's Hebrew and kindred associations.						
1914	75	*All*	Incorporating the Trustees of Council of Young Men's Hebrew and kindred associations.						

The italicised matter following each chapter number indicates the part of such ch private and local in its operation.

Statutes				Amended or otherwise affected by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**
1914	76	*All*.....	Canterbury Fire Company, purchasing fire engine and apparatus, amending L. 1830, ch. 272, § 4.			
1914	77	*All*.....	Draining wet lands in town and village of Goshen, Orange county, powers of trustees, amending L. 1869, ch. 419, by repealing § 14 and adding new § 14.			
1914	79	*All*.....	United German and French Roman Catholic Cemetery Association of the city of Buffalo authorized to appropriate money for the construction of the Roman Catholic Cathedral in the city of Buffalo.			
1914	82	*All*.....	Village of Nunda, Livingston county, highways and bridges, amending charter, L. 1897, ch. 431, §§ 56, 57, 58.			
1914	83	*All*.....	Village of Albion, Mount Albion cemetery, amending charter, L. 1879, ch. 142, tit. 8, §§ 4, 5.			
1914	86	*All*.....	Suspension of navigation on the Oswego canal during season 1914.			
1914	88	*All*.....	State lands in town of Genesee Falls, Wyoming county, assessed for school purposes.			
1914	89	*All*.....	Appropriation for expenses of state racing commission for year 1913.			
1914	90	*All*.....	Clerk of city and county of New York, appointment and compensation of counsel, bond issue, amending L. 1884, ch. 295, § 3a (added).			
1914	91	*All*.....	Reappropriating unexpended balance of appropriation for improvement of canals.			
1914	94	*All*.....	Transfer of lands from Saint Patrick's Cathedral in city of New York to Roman Catholic diocese of Brooklyn.			
1914	95	*All*.....	Enlarging the powers of commission created to provide for celebration of centenary of the battle of Plattsburg, and making an additional appropriation therefor.			
		1, 2.....		1915	616	
		All.....		1916	116	

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[1] Reappropriating unexpended balance.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	97	*All*..... All.....	Incorporating the Church Pension Fund, to provide pensions for clergymen of Protestant Episcopal Church.	1915	239[1]				
1914	98	*All*.....	Wyoming county, submission of proposition to construct public buildings at Silver lake.						
1914	99	*All*.....	Legalizing official acts of notaries public and commissioners of deeds.						
1914	100	*All*.....	Appropriation for erection of monument to memory of General Philip H. Sheridan in Capitol park in city of Albany.						
1914	104	*All*.....	City of Johnstown authorized to issue pavement bonds.						
1914	105	*All*.....	Incorporating the Kehillah of New York city.						
1914	109	*All*..... All.....	Trustees of the Roman Catholic diocese of Albany authorized to convey St. Mary's cemetery.	....	...	....	1915	197	2
1914	110	*All*.....	Appropriation for and continuation of commission to investigate conditions under which manufacture is carried on in first and second class cities.						
1914	114	*All*.....	Commissioner of Education to apportion certain funds for Keeseville high school in towns of Ausable and Chesterfield in counties of Clinton and Essex.						
1914	115	*All*.....	Greater New York charter, changing name of the Normal College of the City of New York, amending L. 1901, ch. 466, § 1139.						
1914	117	*All*.....	"John Boyd Thacher Park," gift from Emma Treadwell Thacher, accepted by the state of New York.						
1914	118	*All*.....	Contracts for telephones in stations of rapid transit railways, amending L. 1891, ch. 4, § 30, subd. 2.						
1914	119	*All*.....	Greater New York charter, receiving bids for College of City of New York, amending L. 1901, ch. 466, § 1128.						
1914	120	*All*.....	Taxes in city of Utica, treasurer's bond and expenses, amending L. 1865, ch. 659, §§ 2, 7.						

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[1] Consolidating with General Clergy Relief Fund.

The italicised matter following each chapter number indicates the part of s private and local in its operation.

Statutes				Amended or c wise affected	
Law	Ch.	§	Subject and Disposition	Law	Ch.
1914	121	*All*.....	City of Rochester, public library, amending charter, L. 1907, ch. 755, §§ 241, 289, 407, §§ 408, 409 (added).		
1914	122	*All*.....	City of Rochester, boundaries, amending charter, L. 1907, ch. 755, § 3, subd. 14.		
1914	123	*All*.....	City of Schenectady, department of judiciary, amending charter, L. 1907, ch. 756, § 173, § 173a (added).		
1914	124	*All*.....	City of Buffalo, children's court, amending charter, L. 1891, ch. 105.		
1914	125	*All*.....	New York Law Institute, powers, amending L. 1830, ch. 48, § 5a (added).		
1914	126	*All*.....	Reinstating Major Edward Gilbert Schermerhorn on the supernumerary list of National Guard.		
1914	127	*All*.....	Incorporating the General Sunday School Association of the Universalist Church.		
1914	129	*All*.....	County clerk of Cattaraugus county, fees, amending L. 1891, ch. 281, § 3.		
1914	130	*All*.....	New York College of Dentistry, amount of real and personal estate to be held, amending L. 1865, ch. 264, § 2.		
1914	131	*All*.....	Masonic Hall Association of Watertown, powers as to property, amending L. 1867, ch. 78, § 1.		
1914	132	*All*.....	Legalizing certain acts of Saint Ann's Home for the aged.		
1914	136	*All*.....	Incorporating Copernicus Educational Aid Association.		
1914	137	*All*.....	Huntington Hebrew Congregation of Huntington shall be deemed a religious corporation.		
1914	138	*All*.....	Bedford Street Methodist Church of New York City authorized to sell lands and remove remains from cemetery.		
1914	140	*All*.....	City of Corning, collection and disposition of taxes, amending L. 1905, ch. 142, § 48.		
1914	141	*All*.....	City of Auburn, water commissioners, amending L. 1894, ch. 36, § 21.		

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	142	*All*.....	City of Albany authorized to construct conduit under waters of Island Creek.						
1914	143	*All*.....	Appropriation for improvement of structures connected with canals.						
1914	144	*All*.....	Appropriation for purchase and construction of machinery for canals of state.						
1914	145	*All*.....	Appropriation for construction of additional gates for barge canal locks.						
1914	146	*All*.....	Reappropriation for payment of certain employees at Gowanda State Hospital.						
1914	147	*All*.....	Chautauqua county board of supervisors authorized to accept, under the will of Elizabeth M. Newton, deceased, site and buildings for tuberculosis hospital.						
1914	151	*All*.....	Town of Hempsted in Nassau county, authorized to borrow money for improvement of waterways.						
		1, 2.....		1916	46				
1914	152	*All*.....	Town of Shelter Island in Suffolk county to acquire lands under water and to appropriate moneys therefor.						
1914	155	*All*.....	Town of Hamburg, in county of Erie may establish and maintain park.						
1914	158	*All*.....	Village of Ossining, providing for reassessment of taxes						
1914	168	*All*.....	Reappropriating appropriations made for deficiencies during year 1913.						
1914	169	*All*.....	Appropriation to pay balance due newspapers for publication of general laws of the legislature.						
1914	170	*All*.....	Appropriation for carrying out the provisions of the workmen's compensation law.						
1914	171	*All*.....	Appropriation for purchase of silver service set for battleship New York.						
1914	172	*All*.....	Appropriation for state's proportion of amount appropriated for highway repair.						
1914	173	*All*.....	Appropriation for payment of interest on Palisades Interstate Park debt.						
1914	174	*All*.....	Appropriation to pay interest on canal debt.						

The italicised matter following each chapter number indicates the part of such cha private and local in its operation.

Statutes				Amended or otherwise affected by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§
1914	175	*All*.....	Appropriation to pay interest on debt for highway improvement.			
1914	176	*All*.....	Appropriation to pay interest on debt for canal terminals.			
1914	177	*All*.....	Appropriation to pay principal and interest on debt for Saratoga Springs state reservation.			
1914	178	*All*.....	Reappropriating unexpended balance of appropriation for terminals and facilities for canal traffic.			
1914	179	*All*.....	Reappropriating unexpended balance of appropriation for canal improvement.			
1914	180	*All*.....	Appropriation for improvements at New York State Training School for Girls at Hudson.			
1914	184	*All*.....	Certain lands in town of Fort Ann, Washington county, reserved for prison purposes.			
1914	190	*All*.....	Incorporating the Order Minor Conventuals.			
1914	193	*All*.....	Expenditure of part of appropriation for certain temporary purposes in education department.[1]			
1914	194	*All*.....	Surplus in canal debt sinking fund transferred to general fund and to canal debt sinking fund for extinguishment of indebtedness.			
1914	208	*All*.....	Village of Ossining, assessment, amending charter, L. 1910, ch. 667, §§ 126, 133, repealing § 135.			
1914	209	*All*.....	Village of Williamsville, amending charter generally, L. 1869, ch. 129, §§ 17, 29, 36.			
1914	210	*All*.....	Wrights Corners Cemetery Association authorized to acquire additional land.			
1914	211	*All*.....	Firemen's Benevolent Fund Association of the city of New Rochelle, New York, trustees and annual meetings, amending L. 1903, ch. 485, § 2.			
1914	212	*All*.....	Hellenic Eastern Orthodox Christian Church of New York, powers of trustees, amending L. 1905, ch. 749, § 1.			

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[1] See L. 1913, ch. 834.

licized matter following each chapter number indicates the part of such chapter treated as special, nd local in its operation.

Statutes			**Amended or otherwise affected by**			**Expressly repealed by**		
h.	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
13	*All*	Care and reformation of females and concerning public interests in city of Brooklyn and county of Kings, amending L. 1892, ch. 439, § 1.						
14	*All*	Appropriation for establishment of brickmaking plant at the New York State Reformatory at Elmira.						
17	*All*	Charter city of Buffalo. [Previous charter, L. 1891, ch. 105.]						
	2		1916	260				
	3		1917	704				
	5		1916	260				
	13, subd. 3		1916	260				
	18, 23		1916	260				
	23		1918	51				
	31, 32, 42, 43, 46, 101		1916	260				
	103a (added)		1917	428				
	104		1916	260				
	106		1916	260				
	106		1917	504				
	106		1918	629				
	108, 108a		1916	260				
	109 (added)		1918	46				
	113, 115		1916	260				
	115		1918	615				
	116a (added)		1917	134				
	116a		1918	615				
	117		1916	260				
	117		1917	504				
	119		1916	260				
	119		1918	615				
	134, 139, 144, 143, subd. 2, 147, 148		1916	260				
	148		1918	615				
	151		1916	260				
	152		1918	615				
	153		1916	260				
	153		1918	615				
	166, 168, 169		1916	260				
	169		1917	476				
	170		1916	260				
	170		1917	476				
	172		1916	260				
	172		1917	476				
	172		1918	615				
	173		1916	260				
	173		1918	615				
	174, 175		1916	260				
	175		1917	476				
	177, 182, 188, 189, 194		1916	260				
	194		1918	615				
	205, 206		1916	260				
	243		....	...	....	1916	260	
	250b		1916	260				
	250e (added)		1916	260				
	251		1916	260				

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	217	251		1917	475				
		264		1916	260				
		264		1918	522				
		270		1916	260				
		270d		1915	346				
		270d		1916	260				
		275		1915	276				
		275a–275j (added)		1915	276				
		277, subd. 1		1916	260				
		277, 279		1918	531				
		286		1917	463				
		290, 291		....	...	....	1917	786	6
		291a (added)		1917	262				
		292		1916	260				
		292, 293		....	...	....	1917	786	6
		296, 297, 301, 302		1918	534				
		318–322, 324, 340		1916	260				
		346		1918	478				
		354, 355		1916	260				
		364 (added)		1916	260				
		376, 380		1916	260				
		All		1914	429[1]				
		All		1916	162[2]				
		All		1916	302[3]				
		All		1916	303[4]				
1914	218	*All*	City of New York, erection of court house in county of Kings and repealing L. 1909, ch. 390, L. 1912, ch. 357.						
1914	219	*All*	City of Lackawanna, county of Erie, proceedings in paving certain streets legalized.						
1914	221	*All*	Court of special sessions of city of Syracuse, acting justice, amending L. 1910, ch. 676, § 4, §4a (added).						
1914	222	*All*	City of New York authorized to establish and maintain a college of commerce and administration and museum of commerce and civics.						
1914	223	*All*	Greater New York charter, cancellation of water rents, amending L. 1901, ch. 466, § 221a.						
1914	224	*All*	City of Yonkers, taxes, amending L. 1908, ch. 452; repealing art. 5, §§ 8, 9, §§ 8, 9, 9a–9i (added).						
1914	225	*All*	City of Mount Vernon, salary of marshal, amending L. 1892, ch. 182, § 97.						

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[1] Site for state building.

[2] Bond issue for sewers.

[3] Assessment for new street.

[4] Widening of Elmwood avenue.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	226	*All*..... All......	Ogdensburg, rate of taxation for school purposes, amending L. 1857, ch. 382, § 17.	....	...	....	1917	786	6
1914	227	*All*.....	City of Oswego, salary of aldermen, amending L. 1895, ch. 394, § 115.						
1914	228	*All*..... All......	City of Hudson, bond issue for construction, repair or equipment of school buildings, amending L. 1895, ch. 751, § 151.	....	...	....	1917	786	6
1914	229	*All*.....	City of Tonawanda authorized to take Colonel John Sweeney's Tonawanda Rural Cemetery for purposes of public street.						
1914	231	*All*.....	Trust fund created by last will of Henry A. Richmond for benefit of teachers in public schools of Buffalo declared valid, and administration of fund.						
1914	232	*All*.....	Accept deed of gift from Herbert Wadsworth of Avon, Livingston county, to state of New York of certain land.						
1914	236	*All*.....	Albany county to provide temporary detention of juvenile delinquents with Mohawk and Hudson River Humane Society and detention of minors after arrest, amending L. 1902, ch. 261, § 1.						
1914	237	*All*.....	Construction and equipment of drill hall at Cornell University and making appropriation therefor.						
1914	246	*All*.....	Appropriation for the Panama-Pacific exposition commission and reappropriating unexpended balance of former appropriation for same purpose.[1]						
1914	247	*All*..... All.....	Appropriation to improve channel of three mile harbor in town of East Hampton.	1916	88[2]				
1914	248	*All*.....	Towing facilities on completed sections of canal authorized and making appropriation therefor.						
1914	249	*All*.....	Reapproprtiating unexpended balance for highway repairs between Sevey and Cranberry lake, Saint Lawrence county.[3]						

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[1] See L. 1912, ch. 541.

[2] Money reappropriated.

[3] See L. 1912, ch. 547

The italicised matter following each chapter number indicates the part of such chapter treate private and local in its operation.

Statutes				Amended or otherwise affected by			Expressl	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	
1914	250	*All*.....	Appropriation for transportation and subsistence of National Guard at unveiling of monument to Baron Steuben at Utica.					
1914	251	*All*.....	Appropriation for purchase of farm for New York State Women's Relief Corps' Home at Oxford.					
1914	252	*All*..... 1.......	Appropriation in connection with state reservation in town of Saratoga Springs, payment for lands acquired, amending L. 1909, ch. 569, § 3.	....	...	....	1916	2
1914	253	*All*.....	Reappropriating unexpended balance for highway purposes.[1]					
1914	254	*All*.....	Appropriation for emergency expenses of health officers of port of New York.					
1914	255	*All*.....	Reappropriating unexpended balance for rebuilding bridge across South bay, Washington county.[2]					
1914	256	*All*.....	Appropriation for state's share of expense of maintaining county roads.					
1914	257	*All*.....	Reappropriating unexpended balance of former appropriation for erection of state armory and stable in city of Albany.[3]					
1914	258	*All*.....	Appropriation to reimburse William F. Flanagan, late county clerk of Suffolk county for certain losses.					
1914	259	*All*.....	Appropriation for game farm in Jefferson county.					
1914	260	*All*.....	Appropriation to enable commissioner of agriculture to disseminate information to the farming communities.					
1914	261	*All*..... All..... All.....	Constitutional convention commission established.........	1915 1915	201[4] 624[5]			
1914	262	*All*.....	Reappropriating unexpended balance of certain appropriations for litigation to prevent smoke nuisance in Richmond county.					

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[1] See L. 1912, ch. 44.
[2] See L. 1912, ch. 518.
[3] See L. 1912, ch. 36.
[4] Commission continued.
[5] Additional appropriation.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	263	*All*	Improvement of basin at or near entrance to Erie canal in city of Albany and making appropriation therefor.						
1914	264	*All*	Greater New York charter, salaries of teaching staff of board of education, amending L. 1901, ch. 466, § 1091.						
1914	265	*All*	Providing for the election of district attorney of the county of Richmond and the appointment of officers and employees for such office.						
		3		1918	127				
		4		1915	408				
		4		1918	127				
1914	267	*All*	Comptroller authorized to readjust certain taxes.						
1914	268	*All*	Appropriation for payment of certain taxes to union free school district number one of town of Harrietstown, Franklin county.						
1914	269	*All*	Appropriation for payment of amount of certain taxes to the town of Harrietstown, Franklin county.						
1914	270	*All*	Appropriation for payment of amount of certain taxes to the town of Santa Clara, Franklin county.						
1914	271	*All*	Appropriations to the highway improvement sinking fund and to the Palisades Interstate Park sinking fund.						
1914	272	*All*	Commission created to investigate provision for the mentally deficient and making appropriation therefor.						
1914	273	*All*	Acquisition by the state of certain real property in town of Cortlandt, Westchester county, for military and naval purposes and reappropriation therefor.[1]						
		All		1918	272[2]				
1914	275	*All*	Reappropriating unexpended balances of former appropriation for improvement of new state routes in the counties of Niagara and Orleans.						
		1		1915	277				
1914	279	*All*	Reappropriating unexpended balance of appropriations for department of highways.[3]						
1914	280	*All*	City of Jamestown, amending charter generally, L. 1907, ch. 387						

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[1] Appropriation L. 1913, ch. 350.

[2] Armory commission reconvey lands.

[3] Appropriations L. 1913, ch. 833, ch. 792.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1914	281	*All*.....	Charter, city of Gloversville, amending generally, L. 1899, ch. 275.						
		20......		....	...	....	1917	786	6
1914	282	All......	City of Syracuse, city and ward boundaries, amending charter, L. 1885, ch. 26, § 3, § 4, subd. 3.						
1914	283	*All*.....	House of Shelter in city of Albany to receive commitments from several counties of the state, amending L. 1901, ch. 123, § 1.						
1914	284	*All*.....	Street improvements in city of Albany, limitation of bond issue, amending L. 1904, ch. 466, § 5.						
1914	285	*All*.....	Establishing firemen's pension fund and insurance fund in city of Albany, repealing L. 1883, ch. 173; L. 1885, ch. 332; L. 1886, ch. 411.						
		5.......		1916	324				
1914	286	*All*.....	Public schools in city of Auburn, annual estimate of board of education, amending L. 1875, ch. 577, § 28.						
		All......		....	...	....	1917	786	6
1914	287	*All*.....	City of Auburn, contracts and bonds for paving streets and portions thereof, amending L. 1903, ch. 430, §§ 3, 5.						
1914	288	*All*.....	City of Binghamton, issuing bonds, amending charter, L. 1907, ch. 751, § 414.						
1914	289	*All*.....	City of Binghamton, amount of money to be raised for school purposes, amending charter, L. 1907, ch. 751, § 389.						
		All......		....	...	....	1917	668	
		All......		....	...	....	1917	786	
1914	290	*All*.....	Burial of members of certain religious corporations in the city of Buffalo, amending L. 1881, ch. 345, § 2.						
1914	291	*All*.....	City of Buffalo, department of finance, amending charter, L. 1891, ch. 105, § 73.						
1914	292	*All*.....	City of Buffalo, police pension fund, amending charter, L. 1891, ch. 105, § 211, subd. 3.						
1914	293	*All*.....	City of Cortland, protecting public health and property, amending charter, L. 1900, ch. 160, § 89 (added).						
1914	294	*All*.....	Ithaca, boundaries and civil divisions of the city, amending charter, L. 1908, ch. 503, §§ 2, 3.						
1914	295	*All*.....	City of Mount Vernon, annual report of comptroller, amending L. 1895, ch. 710, § 1.						

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	296	*All*.....	City of Port Jervis, street improvements, amending charter, L. 1907, ch. 753, § 71.						
1914	297	*All*.....	City of Schenectady, collection of tax on foreign fire insurance companies, amending L. 1862, ch. 109, § 10.						
1914	298	*All*.....	City of Syracuse, surfacing streets paved with certain materials, amending L. 1905, ch. 684, §§ 19, 20.						
1914	299	*All*.....	Erection, equipment and furnishing of a vocational high school building in the city of Syracuse..................						
		2–4.....		1915	649				
		4.......		1917	165				
		4.......		1918	2				
		11......	....	1915	649				
1914	300	*All*.....	Department of public works in city of Syracuse and repealing certain sections of L. 1905, ch. 684.						
		1, 2.....		1918	448[1]				
1914	301	*All*.....	City of Tonawanda, street, highway and sewer bonds, amending charter, L. 1905, ch. 357, tit. 14, § 1.						
1914	302	*All*.....	City of Watertown, assessments, amending charter, L. 1897, ch. 760, §§ 218, 219.						
1914	303	*All*.....	City of Watertown, time when common council may borrow money, amending charter, L. 1897, ch. 760, § 206.						
1914	304	*All*.....	City of Utica, office of ward collector, amending charter, L. 1862, ch. 18, §§ 51, 53; repealing § 52.						
1914	305	*All*.....	Superior Criminal Courts Act of city of New York, commitments for vagrancy, amending L. 1910, ch. 659, § 88, subd. 7 (added).						
1914	308	*All*.....	Village of Waterford, amending charter generally, L. 1859, ch. 243.						
1914	311	*All*.....	Village of Lyons, jurisdiction of police justice in civil actions, amending charter, L. 1907, ch. 750, § 133a (added).						
1914	313	*All*.....	Commission to investigate housing of people in second class cities, and making appropriation therefor.						
1914	314	*All*.....	City of Cortland, payment and collection of taxes, amending charter, L. 1900, ch. 160 § 203 (added).						

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[1] See note L. 1918, p. 1322.

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Express	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	C
1914	321	*All*	Conservation Commission empowered to collate and publish as records of the state the flow of Black river at Forestport and Boonville.					
1914	322	*All*	Repealing L. 1882, ch. 133; L 1885, ch. 161; L. 1901, ch. 655, collection of taxes in Cayuga county, and legalizing conveyances made pursuant to repealed acts.					
1914	330	*All*	Onondaga county purchasing agent, supplies, amending L. 1906, ch. 20, § 2.					
1914	335	*All*	City of Glens Falls, collection of taxes, amending charter, L. 1908, ch. 29, § 147.					
1914	336	*All*	City of Little Falls, disorderly persons, amending charter, L. 1895, ch. 565, § 145.					
1914	337	*All*	City of Little Falls, street paving, amending charter, L. 1895, ch. 565, § 68.					
1914	338	*All*	City of New Rochelle, taxes and special assessments, amending charter, L. 1910, ch. 559, §§ 165, 173.					
1914	339	*All*	City of Ogdensburg, taxes and assessments, amending charter, L. 1893, ch. 87, § 54a (added).					
1914	340	*All*	City of Oneonta, amending charter generally, L. 1908, ch. 454.					
1914	341	*All*	City of Plattsburg, amending charter generally, L. 1902, ch. 269.					
1914	342	*All*	City of Rochester, amending charter generally, L. 1907, ch. 755; repealing art. 19, §§ 560–563.					
1914	354	*All*	Charter, city of Batavia. [Previous charter (village) L. 1884, ch. 195.]					
		10		1915	249			
		10		1917	584			
		12		1917	584			
		13		1915	249			
		14		1915	249			
		14		1917	584			
		18		1917	584			
		32		1915	536			
		35		1915	249			
		36a (added)		1917	584			
		37		1915	249			
		43		1917	584			
		45 (added)		1915	249			
		50		1915	249			

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	354	51, subd. 11		1917	584				
		57		1915	249				
		59		1917	584				
		64		1915	249				
		86, subd 1		1915	536				
		86, subd. 1a (added)		1915	536				
		86, subd. 10		....	...	....	1915	536	
		94		1915	249				
		104		1917	584				
		119		1915	249				
		121 (added)		1915	249				
		125		1915	249				
		174–176, 179, 180		1917	584				
		200		....	...	....	1917	786	6
		201 (added)		1915	536				
		All		1916	73[1]				
		All		1917	432[2]				
		All		1917	676[3]				
1914	355	*All*	Sessions of board of supervisors of Saratoga county and raising of money in advance authorized.						
1914	356	*All*	Westchester county, school teachers' retirement fund, amending L. 1909, ch. 431, §§ 1, 3, 4.						
1914	359	*All*	Incorporating Saint Lawrence county farm bureau.						
1914	364	*All*	Reappropriating certain unexpended balances of former appropriations.						
1914	368	*All*	City court of Albany, generally revising and amending L. 1910, ch. 603.						
1914	370	*All*	Additional appropriation for construction of culvert under Erie canal in city of Lockport.[4]						
1914	371	*All*	Reappropriating moneys for establishing of fish hatchery in county of Warren.[5]						
1914	372	*All*	Appropriation for a state game farm on Long Island.						
1914	373	*All*	Appropriation for the erection of state armory in city of Yonkers.						
1914	374	*All*	Appropriating moneys heretofore assessed upon counties in the third and fourth brigade districts for maintenance, construction and repairs of armories.						

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[1] Bond issue for filtration plant legalized.

[2] *Exempt* Volunteer Firemen's Association, Inc., collect foreign fire insurance tax.

[3] Bond issue for new high school legalized.

[4] Original appropriation L. 1912, ch. 397.

[5] Original appropriation L. 1912, ch 524.

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly b	
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**C**
1914	375	*All*.....	Salaries of the commissioners of jurors in certain counties, amending L. 1899, ch. 441, § 4, subd. 3.					
1914	377	*All*.....	State comptroller to determine application of the owners of certain lands in Kings county for cancellation of tax sale.					
1914	380	*All*.....	Release to Etta Dean Miller certain real estate in town of Somers, Westchester county, acquired by the state upon the death of Edward O'Conners.					
1914	384	*All*.....	Village of Mexico, proceedings in relation to establishment of water works and bond issue legalized.					
1914	386	*All*.....	Release to the Salem Baptist Church of New Rochelle interest of the state in the real estate of John Coates, deceased.					
1914	387	*All*.....	Taxes in Oswego county, repealing L. 1882, ch. 322.					
1914	390	*All*.....	Erection of boathouse, shelters, wharves and retaining walls at city of Buffalo for naval militia, amending L. 1912, ch. 160, § 2.					
1914	391	*All*.....	Legalizing proceedings of board of supervisors of Saratoga county relative to issuance of highway improvement bonds.					
1914	392	*All*.....	Time within which International Railway Company and Crosstown street Railway Company of Buffalo shall complete railroads in city of Buffalo, amending L. 1903, ch. 637, § 1.					
1914	393	*All*.....	Comptroller authorized to readjust the accounts of certain trust companies for taxes paid.					
1914	394	*All*.....	Reappropriating moneys for alteration of state house.[1]					
1914	401	*All*.....	Legalizing proceedings of trustees of Saranac lake in opening certain street and in issuance of certificates of indebtedness.					

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[1] Original appropriation L. 1912, ch. 520.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	402	*All*.....	City of Oswego, salary of city engineer, amending L. 1895, ch. 394, § 110.						
1914	404	*All*.....	Village of Port Chester, Westchester county, opening, widening and extending streets, amending charter L. 1868, ch. 818, tit. 5, § 4.						
1914	406	*All*.....	City of Binghamton, legalizing issuance of bonds for expense of construction of dyke wall along banks of Chenango river.						
1914	407	*All*.....	Concord Society of Strykersville authorized to sell property and the income of proceeds to be used for cemetery upkeep.						
1914	409	*All*.....	Legalizing proceedings of town of Middlebury, Wyoming county and of the board of supervisors of such county in assessing certain taxes for lighting system.						
1914	411	*All*.....	Extending time to finish construction of railroad of Frontier Electric Railway Company, supplementing L. 1911, ch. 523.						
		All......		1917	539[1]				
1914	412	*All*.....	Portion of present Champlain canal in county of Saratoga retained for navigation and terminal purposes.						
1914	415	*All*.....	Legalizing proceedings for the erection of a town building by the town of Cameron, in county of Steuben, and authorizing bond issue.						
1914	416	*All*.....	Erie canal, Oswego canal and Champlain canal, payment to contractors, amending barge canal act, L. 1903, ch. 147, § 9.						
1914	418	*All*.....	Regulating the grading, packing, marking, shipping and sale of apples.						
		All.....		....	....	....	1915	217	
1914	419	*All*.....	Appropriation for construction of buildings for Schoharie State School of Agriculture at Cobleskill.						
1914	420	*All*.....	Incorporating the Ontario-Niagara Connecting Bridge Company.						
		1.......		1915	429				

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[1] Time extended.

The italicised matter following each chapter number indicates the part of such chapter treate private and local in its operation.

Statutes				Amended or otherwise affected by			Express
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law
1914	421	*All*	Legalizing proceedings of common council of city of Auburn in paving South Division street and the issuance of bonds.				
1914	422	*All*	City of Jamestown, establishing municipal plant for distributing milk, amending charter, L. 1907, ch. 387, §§ 270–279, 279a (added).				
1914	423	*All*	City of Lockport, issuance of bonds for water pipe line and for improvement of union school building legalized.				
1914	424	*All*	Greater New York charter, transfer of members of police force of board of water supply to police department, amending L. 1901, ch. 466, § 276b (added).				
1914	425	*All*	City of Poughkeepsie, cost of certain improvements, amending charter, L. 1896, ch. 425, § 105.				
1914	426	*All*	City of Poughkeepsie, maintenance of tuberculosis hospital, amending L. 1910, ch. 465, §§ 1–3.				
1914	427	*All*	City of Salamanca, certificates of indebtedness issued by common council, legalized.				
1914	428	*All*	Establishment of water department and construction of waterworks system in city of Watervliet				
		8		1915	131		
		15		1916	264		
		All		....	...	....	1918
1914	429	*All*	City of Buffalo authorized to offer or tender the sale or gift of a site for a state building.				
1914	430	*All*	Legalizing proceedings of common council of city of Gloversville in the sale of certain promissory notes for highway improvement and authorizing issue of bonds to pay such notes.				
1914	431	*All*	City of Lackawanna, city officers and police department, amending charter, L. 1909, ch. 574, §§ 10, 13, 122, 124, 125, 127.				
1914	432	*All*	City of Mount Vernon, pension fund for paid officers and members of the fire department.				

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[1] L. 1914, ch. 428 conditionally repealed. Ninety days after acceptance of co for the construction of the waterworks system.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	433	*All*.....	City of New Rochelle, city court, amending L. 1910, ch. 559, §§ 193, 196, §§ 225-228 (added).						
1914	434	*All*.....	Authorizing the preparation of a map of Queens county, indexing and reindexing conveyances and other instruments and issue of bonds by New York city.						
1914	435	*All*.....	City of Oneida, board of water commissioners created, amending charter, L. 1911, ch. 648, tit. 7, schedule of sections, § 82, §§ 82a–82k (added).						
1914	436	*All*.....	Providing for a new charter for the city of Olean and its submission for approval to the electors of the city.[1]						
1914	437	*All*.....	City of Syracuse, construction of storm water sewer system in First and Second wards, amending L. 1907, ch. 356, §§ 3, 11.						
1914	438	*All*.....	Repealing L. 1913, ch. 288, §§ 3, 4, issuing bonds for waterworks department in city of Troy.						
1914	439	*All*.....	Repealing L. 1904, ch. 345, town of Ossining appropriate certain moneys to Ossining Hospital Association.						
1914	441	*All*.....	Providing for sale of real estate in certain towns on Long Island, in which Nellie J. Davis and others have life estate under will of Charles J. Randall, deceased.						
1914	442	*All*..... All......	Repealing L. 1910, ch. 343, ceding to town of Smithtown adjacent land for protection of clamming and revesting in the state rights in adjacent lands.	....	...	....	1915	267	2
1914	444	*All*..... 15......	Authorizing a city of the second or third class to adopt a simplified form of government.	1916	156				
1914	445	*All*.....	New York city consolidation act, reformatory institutions to which certain females may be committed, amending L. 1882, ch. 410, § 1466, subd. 1.						

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[1] Election held June 30, 1914 and charter disapproved, and inoperative. New city charter L. 1915, ch. 535.

The italicised matter following each chapter number indicates the part of such chapter treated
private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly by	
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**C**
1914	446	*All*.....	Greater New York charter, funds for street and park openings, amending L. 1901, ch. 466, §§ 176, 422.					
1914	447	*All*.....	Inferior criminal courts act of the city of New York, jurisdiction of the night courts, amending L. 1910, ch. 659, § 77.					
1914	448	*All*.....	Greater New York charter, commissioner of docks, amending L. 1901, ch. 466, § 827.					
1914	449	*All*.....	Laying out, opening and extending Queens boulevard in city of New York, through land of Maple Grove cemetery in borough of Queens.					
1914	450	*All*.....	Greater New York charter, payment of county charges, amending L. 1901, ch. 466, § 902.					
1914	451	*All*.....	Greater New York charter, statements of amounts necessary to be raised by taxation, amending L. 1901, ch. 466, § 900.					
1914	452	*All*.....	Inferior criminal courts act, of the city of New York, when summons may be substituted for arrest, amending L. 1910, ch. 659, § 83.					
1914	453	*All*.....	City of New York, transfer of certain moneys to the treasurer from custody of chamberlain.					
1914	454	*All*.....	Inferior criminal courts act, of the city of New York, commitment of disorderly or vagrant persons in borough of Queens, amending L. 1910, ch. 659, § 88, subds. 3, 4. 5, §89, subd. 4.					
1914	455	*All*.....	Greater New York charter, vehicular traffic, amending L. 1901, ch. 466, § 315.					
1914	456	*All*.....	Health and efficiency of policemen in cities of first and second class, act not to apply to traffic squad in New York city, amending L. 1911, ch. 360, § 6a (added).					
1914	457	*All*.....	Greater New York charter, disorderly persons, amending L. 1901, ch. 466, § 685.					

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	458	*All*	Greater New York charter, vacation periods in the department of parks, amending L. 1901, ch. 466, § 1567.						
1914	459	*All*	Greater New York charter, prevention of fires and fire drills, amending L. 1901, ch. 466, §§ 774, 775, §775a (added).						
1914	460	*All*	Greater New York charter, licenses and permits to have or possess pistols or revolvers, amending L. 1901, ch. 466, § 353, subd. 7.						
1914	461	*All*	Greater New York charter, registration of births, amending L. 1901, ch. 466, § 1241.						
1914	462	*All*	Greater New York charter, appeals and costs in abandonment proceedings, amending L. 1901, ch. 466, § 689.						
1914	463	*All*	Greater New York charter, orders and commitments in abandonment proceedings, amending L. 1901, ch. 466, § 686.						
1914	464	*All*	Inferior criminal courts act in New York city, procedure in domestic relations court, amending L. 1910, ch. 659, § 74.						
1914	465	*All*	Recording and indexing instruments affecting land in New York city, division into sections and blocks of a part of Manhattan borough, amending L. 1889, ch. 349, § 3.						
		All		....	...	....	1916	514	
1914	466	*All*	Greater New York charter, annual appropriation for support and maintenance of American Museum of Safety, amending L. 1901, ch. 466, § 244a (added).						
1914	467	*All*	Greater New York charter, proceedings prior to grant of franchise, amending L. 1901, ch. 466, § 74, (repealed) § 74 (added).						
1914	468	*All*	Additional clerk in the office of the district attorney of the county of Kings, amending L. 1896, ch. 772, § 3.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1914	469	*All*.....	New York city consolidation act, city and county officers to receive no fees for recording or certifying papers, amending L. 1882, ch. 410, § 1505a (added).						
1914	470	*All*.....	Greater New York charter, height and bulk of buildings regulated, location of industries and buildings by board of estimate and apportionment, amending L. 1901, ch. 466, §§ 242a, 242b (added).						
1914	471	*All*.....	Greater New York charter, rehearing of charges against and the reinstatement of persons dismissed from city departments, amending L. 1901, ch. 466, § 1543b.						
1914	472	*All*.....	Greater New York charter, licenses to auctioneers, penalty for not securing, amending, L. 1901, ch. 466, § 34.						
1914	473	*All*.....	Appropriation by city of New York of portion of Bronx Park for the use of New York Botanical Garden, amending L. 1891, ch. 285, § 5a (added).						
1914	474	*All*.....	Greater New York charter, notes to be issued in anticipation of tax levies, amending L. 1901, ch. 466, § 189.						
1914	475	*All*.....	Greater New York charter, department of licenses, licenses for various purposes and fees therefor, amending L. 1901, ch. 466, §§ 640, 641, (added), §§ 1473, 1474, 1475, 1483, 1490, 1494; repealing § 346.						
1914	476	*All*.....	Greater New York charter, director and assistant director of the division of reference and research in the department of education, amending L. 1901, ch. 466, §§ 1060, 1067, 1068, 1092.						
		1.......		....	...	....	1917	786	6
1914	477	*All*.....	Greater New York charter, disposal of discarded school books by board of education, amending L. 1901, ch. 466, § 1066.						
1914	478	*All*.....	Water supply board of New York city to adopt and enforce rules for protection of highways and bridges, amending L. 1905, ch. 724, § 35a (added).						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	479	*All*.....	Greater New York charter, bureau of compulsory education, school census and child welfare established, amending L. 1901, ch. 466, § 1069, subd. 8 (added).						
1914	481	*All*.....	Greater New York charter, funds for removal of snow, amending L. 1901, ch. 466, § 603 (added)						
1914	486	*All*.....	Commissioners of land office authorized to grant and convey lands under waters of Lake Erie to city of Dunkirk.						
1914	487	*All*.....	Bond issue for cost of construction of sanitary trunk sewer and outlet sewer in county of Westchester, amending L. 1905, ch. 646, § 14.						
1914	490	*All*.....	Time extended to Buffalo Frontier Terminal Railroad Company to finish construction of its road.						
1914	491	*All*.....	Time extended to Frontier and Western Railroad Company to finish construction of its road.						
1914	495	*All*.....	Greater New York charter, prevention of fires and fire hazards, amending L. 1901, ch. 466, §§ 776, 778c.						
1914	496	*All*.....	Abolishment and removal of Kings county penitentiary, amending L. 1905, ch. 173, §§ 4, 7.						
1914	497	*All*.....	Justices of Appellate Division of the Supreme Court in the First Department may retire employees and provide compensation, amending L. 1911, ch. 855, §§ 1, 2.						
1914	499	*All*.....	Certain real estate in the borough of Brooklyn, county of Kings, released by the state of New York to John R. Ferguson.						
1914	500	*All*..... 2, 3.....	Creating a commission to select a site and construct a monument to the late Jesse Ketchum, in city of Buffalo.	 1915	 173				
1914	*502*	*All*.....	Indexing instruments relating to lands and liens thereon in Kings county, duties of register and fees, amending L. 1894, ch. 365, §§ 16, 18.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	503	*All*.....	Submission of proposition to voters of Dunkirk union free school district for construction of public school building in Fourth ward of city of Dunkirk.						
1914	504	*All*.....	Boundaries of union free school district number four, of town of Rye, Westchester county, enlarged to include portion of village of Port Chester.						
1914	505	*All*.....	New York city board of assessors authorized to allow damages sustained by change of grade of Shaw avenue, in borough of Queens.						
1914	510	*All*.....	Providing additional requirements in preparation of assessment rolls for townships and villages and tax districts therein in the county of Westchester.						
		All......		1915	40[1]				
		All......		1916	105[2]				
1914	515	*All*.....	Certain property of Robert H. Matthewson, deceased, of Brooklyn, county of Kings, released by the state to Minnie Klingel.						
1914	516	*All*.....	Appropriation for highway construction and improvement..						
		All......		1916	646[3]				
		All......	....	1918	103[3]				
1914	518	*All*.....	Regulating the business of companies and persons engaged in the business of making personal loans.						
		All......		....	...	....	1915	588	
1914	521	*All*.....	Reappropriating unexpended balances of former appropriations.						
1914	522	*All*.....	Appropriation for state commission of highways for maintenance and repair of public highways improved or constructed at state aid.						
1914	523	*All*.....	Appropriation for continuing work in mapping certain canal lands.						
1914	524	*All*.....	Change of date of the official primary election in the year nineteen hundred and fourteen.						
1914	525	*All*.....	Annual contribution to canal sinking funds.						
1914	526	*All*.....	Reappropriating an unexpended balance for improvement of public highways............						
		All......		1916	646[3]				
		All......		1918	164[3]				

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[1] Generally revised and amended.
[2] Re-enactment of certain provisions.
[3] Reappropriated.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1914	527	*All*.....	Temporary state loan authorized for necessary expenses in preparing national guard for active service.						
1914	528	*All*.....	Appropriation for payment of interest on debt for highway improvement.						
1914	529	*All*.....	Appropriations for support of government.						
1914	530	*All*.....	Appropriation for certain expenses of government and various miscellaneous appropriations and supplying deficiencies in former appropriations.						
1914	531	*All*.....	Appropriations for construction, improvements, repairs and equipments at various state institutions and for other miscellaneous constructions and improvements.						
1914	532	*All*.....	Appropriations for the valuation of telephone properties in the city of New York.						
1914	p. 2385		Altering the boundary lines of the towns of Woodbury and Monroe in Orange county.						
1914	p. 2387		Establishing the boundary lines between the towns of Red Hook and Rhinebeck, in Dutchess county.						
1915	2	*All*.....	Interest on certain highway and canal bonds, amending L. 1913, ch. 787, § 1.						
1915	4	*2*.......	Repealing L. 1912, ch. 453, § 2, application of state fire marshall to cities of over one million inhabitants.						
1915	5	*All*.....	Levying taxes for police fund in village of Port Chester, Westchester county, amending L. 1903, ch. 285, § 1.						
1915	6	*All*.....	Village of Port Chester, Westchester county, laying sidewalks, amending charter, L. 1868, ch. 818, tit. 5, § 33.						
1915	7	*All*.....	Village of Peekskill, boundaries, amending charter, L. 1883, ch. 117, tit 1, § 1.						
1915	8	*All*.....	Village of Port Chester, Westchester, county, repaving or remacadamizing streets, amending L. 1899, ch. 517, §§ 1, 2, 6, 8, 9, 10, 13, 14, 15, 16, 20.						

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	9	*All*.....	Provisional appointments under the provisions of the Civil Service Law.						
1915	10	*All*.....	Appropriation for highway improvement purposes.[1]						
1915	13	*All*..... 11......	City of Rochester, amending charter generally, L. 1907, ch. 755.	....	...	....	1917	786	11
1915	15	*All*.....	City of Cortland authorized to sell fire station building and lot and use of proceeds for new fire station.						
1915	16	*All*.....	Morningside Cemetery Association of Syracuse authorized to convey certain land in the city of Syracuse.						
1915	17	*All*.....	Repealing L. 1913, ch. 280, creating a department of efficiency and economy.						
1915	19	*All*.....	Abolishing the office of collector in the village of Brockport.						
1915	20	*All*.....	Village of Herkimer, investment of surplus moneys of water and light departments, amending L. 1910, ch. 162, § 9, subd. 4 (added).						
1915	21	*All*.....	Hospital of Good Shepard of Syracuse authorized to transfer all its property to Syracuse University.						
1915	24	*All*.....	Village of Port Chester, payment of expense and issuing bonds for highway over land ceded, amending L. 1911, ch. 518, § 4a (added).						
1915	26	*All*.....	City of New York, additional lands for reformatory, amending L. 1913, ch. 32, § 1.						
1915	29	*All*..... 2.......	Creating the office of superintendent of buildings for the county of Westchester and prescribing his powers and duties.	1917	70				
1915	33	*All*.....	Legalizing action of the town officers of the town of Pike,, Wyoming county, in submitting at a town meeting a proposition for the support of the Pike Free Library.						
1915	34	*All*.....	Legalizing proceedings of the town board and other officers of the town of Greece, Monroe county, in relation to construction of a water system and issuing bonds to to pay for same.						

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[1] Highway bond issue L. 1912, ch. 298.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1915	35	*All*	Village of White Plains, legalizing acts and vote upon proposition to borrow money for fire alarm system and fire houses.						
1915	39	*All*	Providing for the payment of unpaid school taxes in town of Rye, Westchester county.						
1915	40	*All*	County of Westchester, assessment and collection of taxes, amending generally, L. 1914, ch. 510.						
1915	41	*All*	Incorporating Herring College, Watertown, New York.						
1915	44	*All*	Authorizing the town of Riverhead, Suffolk county, to raise money by taxes for a town dock on the Peconic river.						
1915	46	*All*	City of Syracuse, intercepting sewer board and issue of bonds, amending L. 1907, ch. 356, §§ 1, 11.						
1915	47	*All*	Creating the office of purchasing agent for the county of Westchester.						
1915	50	*All*	Authorizing the Niagara County Agricultural Society to mortgage its real estate.						
1915	57	*All*	Authorizing the submission of a proposition to the electors of Jefferson county in relation to the establishment of a tuberculosis hospital.						
1915	58	*All*	City of Albany, bonds for river front improvement, amending L. 1906, ch. 689, § 7.						
1915	59	*All*	City of Albany, street improvement bonds, amending L. 1904, ch. 466, § 5.						
1915	63	*All*	City of Mount Vernon, issuance of water tax relief bonds, amending charter, L. 1892, ch. 182, § 250a (added).						
1915	64	*All*	City of Gloversville, amending charter, L. 1899, ch. 275, §§ 14, 25, 208.						
1915	65	*All*	Legalizing acts and proceedings in connection with improving certain streets as parts of a state highway in village of Bath, and bond issue to pay cost of same.						
1915	66	.... All.....	Change of name to New York Magdalen House not to affect commitments.	1918	115[1]				

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[1] Name changed to Inwood House not affect commitments.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1915	67	*All*.....	Office of sheriff of Yates county, additional undertaking, repealing L. 1897, ch. 362, § 6.						
1915	69	*All*.....	Charter city of Rensselaer. [Previous charter, L. 1913, ch. 481.]..................						
		12, 202, 234, 235.		1917	680				
		279–289.	....	....	...	....	1917	786	6
1915	70	*All*.....	Village of Franklinville, Cattaraugus county, authorized to acquire the old cemetery for a public park.						
1915	71	*All*.....	Establishing ferry across Lake Champlain from Sweets' dock in the town of Chazy to Isle La Motte, Vermont.						
1915	74	*All*.....	Public park in town of Rye, Westchester county, amending L. 1907, ch. 711, §§ 8, 9, 12.						
1915	75	*All*.....	Certain provisions of the village law not to apply to bonds or other obligations of a village issued pursuant to any village election.						
1915	76	*All*.....	Providing for convention to revise the Constitution........						
		All......		1915	338[1]				
1915	77	*All*.....	Providing for the appointment by sheriff of Rensselaer county of certain officers and providing for their salaries.						
1915	78	*All*.....	Appointment by acting superintendent of the poor of Rensselaer county of clerks and attendants.						
		All......		1918	25[2]				
1915	79	*All*.....	Greater New York charter, police and fire departments, amending L. 1901, ch. 466, § 1543a.						
1915	80	*All*.....	Legalizing vote of electors on propositions submitted at town meeting in the town of Barton, Tioga county.						
1915	81	*All*.....	Legalizing proceedings of the village of East Rochester as to paving and construction of sewer and bond issue to pay for same.						
1915	84	*All*.....	Collection of arrears of taxes in Suffolk county.						
1915	86	*All*.....	Bond issue to pay debts and expenses of city of Ogdensburg.						
1915	87	*All*.....	Town of Rye, Westchester county, authorized to pay claim of Samuel H. Graham.						

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[1] Appropriation for salaries and expenses.

[2] Changing title of office of superintendent of poor.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	88	*All*.....	Authorizing the Commissioners of the Land Office to sell certain lands in the village of Warsaw, Wyoming county.						
1915	89	*All*.....	Legalizing proceedings of village of Philadelphia as to improving certain streets, and the issuance of bonds.						
1915	92	*All*.....	Fees and salary of supervisors in the county of Oswego, amending L. 1897, ch. 290, § 1.						
1915	93	*All*.....	Legalizing certain acts of the corporation of Saint Luke's Protestant Episcopal Church in Cambridge.						
1915	94	*All*.....	Incorporating the James Stokes Society.						
1915	95	*All*.....	Incorporating the Valeria Home.						
1915	96	*All*.....	Authorizing the Adjutant-General to hear and determine the application of Margarita E. Dillon for pension.						
1915	97	*All*.....	International Committee of Young Men's Christian Associations, filling vacancies and management of property, amending L. 1883, ch. 241, §§ 2, 4, 5, 6.						
1915	98	*All*.....	Authorizing the county treasurer of Saint Lawrence county to appoint a deputy.						
1915	99	*All*.....	Legalizing official acts of notaries public and commissioners of deeds.						
1915	101	*All*.....	Extending time of New York Connecting Railroad Company to finish and put into operation its road.						
1915	102	*All*.....	Extending time of New York Connecting Railroad Company to complete bridge across East River.						
1915	103	*All*.....	Watertown volunteer exempt fire department, property and assets held in exempt fund transferred to general fund.						
1915	104	*All*.....	Appropriation for continuation of the work of workmen's compensation commission.						

The italicised matter following each chapter number indicates the part of such chapter treat private and local in its operation.

Statutes				Amended or otherwise affected by			Expres
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law
1915	109	*All*.....	Westchester county, board of supervisors authorized to create a commission to prepare a plan for future development of such county.				
1915	110	*All*.....	Grants and conveyances legalized and control and jurisdiction of Grove Place cemetery in town of Chili, Monroe county, extended.				
1915	111	*All*.....	Authorizing the county of Westchester to borrow money for construction of certain buildings, creating a building commission and defining powers and duties and fixing salaries and terms of office of commissioners.				
		4.......		1917	8		
1915	112	*All*.....	City of Ogdensburg, borrowing money. amending charter, L. 1893, ch. 87, § 38a (added).				
1915	113	*All*.....	Borrowing money for schools and academies in village of Ogdensburg, amending L. 1857, ch. 382, § 17a (added).				
		All.....		....	...	....	1917
1915	114	*All*.....	City of Yonkers, pensions for certain employees, amending charter, L. 1908, ch. 452, art 3, § 1, subd. 40.				
1915	115	*All*.....	Legalizing tax levied for repair of highways by the several towns for the year nineteen hundred and fourteen.				
1915	116	*All*.....	Authorizing the adjutant-general to determine claim of Margaret Mollen for pension.				
1915	118	*All*.....	Village of Medina, lighting of streets, amending charter, L. 1909, ch. 545, § 194.				
1915	119	*All*.....	Conferring additional powers upon American Institute of Architects.				
1915	123	*All*.....	Children's Aid Society of Rochester, employment of agents and assistants, amending L. 1895, ch. 355, § 7.				
1915	126	*All*.....	Village of Long Beach authorized to light outside highways.				
1915	128	*All*.....	Board of supervisors of Suffolk county to make office of county clerk a salaried office.				
1915	129	*All*.....	Board of supervisors of Suffolk county to make office of county treasurer a salaried office.				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	130	*All*.....	Charter city of Cohoes. [Previous charter, L. 1892, ch. 671.]						
		All.....		1917	548[1]				
1915	131	*All*.....	City of Watervliet, authorized to issue bonds for purposes of waterworks system, amending L. 1914, ch. 428, § 8.						
1915	134	*All*.....	Appropriation for highways and bridges on Indian reservation.						
1915	135	*All*.....	Appropriation for repairs of highways.						
1915	138	*All*.....	Appropriation for the purchase of additional land for the Saint Lawrence state hospital.						
1915	141	*All*.....	Extending time of Westchester Northern Railroad Company to begin and finish construction of its road.						
1915	142	*All*.....	Ferry from Gunnisons landing in town of Crown Point, Essex county, across Lake Champlain to the town of Bridport, Vermont.						
1915	143	*All*.....	Care and maintenance of prisoners in Seneca county, amending L. 1899, ch. 547, § 10.						
1915	144	*All*.....	Extending time of Champlain and Sanford Railroad Company to begin and finish construction of its road.						
1915	145	*All*.....	Village of Waterloo authorized to issue bonds for paving.						
1915	149	*All*.....	Barge Canal Act, use of materials, amending L. 1903, ch. 147, § 17.						
1915	153	*All*.....	Appropriation to pay expenses of state racing commission.						
1915	156	*All*.....	Metropolitan Museum of Art in Central Park, in New York city, annual appropriation, amending L. 1906, ch. 344, § 1.						
1915	157	*All*.....	Village of Peekskill, power to borrow money, amending charter, L. 1883, ch. 117, tit. 10, § 1.						
1915	159	*All*.....	City of Port Jervis, violation of ordinances, amending charter, L. 1907, ch. 753, § 60, subd. 23.						
1915	160	*All*.....	City of Port Jervis, police, amending charter, L. 1907, ch. 753, §§ 13, 130, 132.						

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[1] Police pension fund.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	161	*All*.....	Greater New York charter, College of the City of New York, amending L. 1901, ch. 466, § 1132.						
1915	162	*All*.....	Compensation of policemen in the village of Green Island, Albany county, amending L. 1871, ch. 637, §§ 9, 15.						
1915	163	*All*.....	City of Lockport authorized to issue bonds for meeting deficit in certain funds.						
1915	164	*All*.....	Greater New York charter, deputies in police department, amending L. 1901, ch. 466, § 270.						
1915	165	*All*.....	Appropriation for the prevention or control of diseases or insect pests of plant or domestic animal life.						
1915	166	*All*.....	Appropriation for certain immediate expenses of the legislature.						
1915	170	*All*.....	Incorporating the city of Mechanicville.[1]						
		All......	[Previous charter (village), L. 1891, ch. 106.]	1917	372[2]				
1915	172	*All*.....	City of Johnstown, bond issue for payment of certain debts and expenses.						
1915	173	*All*.....	Powers of the Jesse Ketchum Monument Commission, amending L. 1914, ch. 500, §§ 2, 3.						
1915	174	*All*.....	Repealing L. 1913, ch. 281, establishing a state board of estimate.						
1915	177	*All*.....	Village of Mayville, Chautauqua county, legalizing bond issue for electric light and water plant.						
1915	179	*All*.....	Appropriation for maintenance, construction, alteration and repair of armorics in the third and fourth brigade districts.						
1915	180	*All*.....	Relief of town of Clifton, Saint Lawrence county, as to taxes on state lands.						
1915	184	*All*.....	Hudson Orphan and Relief Association, power to take and hold property, amending L. 1846, ch. 90, § 2.						

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[1] Charter adopted by vote of electors, May 12, 1915.

[2] Town of Half Moon reimbursed by city.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	185	*All*	Legalizing acts and proceedings by towns and town boards in relation to water supply in such towns.						
1915	186	*All*	Authorizing the commissioners of claims to determine claim of William G. Barrett and William A. Guinard against state.						
1915	188	*All*	City court of Buffalo, amending L. 1909, ch. 570, §§ 40, 54, 56, § 54a (added).						
1915	191	*All*	Relief of the town of Belmont, Franklin county, as to unpaid taxes.						
1915	197	*All*	Authorizing the Roman Catholic Diocese of Albany, N. Y., to convey certain lands situated in the city of Albany, repealing L. 1914, ch. 109.						
1915	199	*All*	Sale of part of armory site in city of Olean, amending L. 1910, ch. 635, § 1.						
1915	200	*All*	Office of sheriff of Hamilton county a salaried office.						
1915	201	*All*	Providing for the continuation of the constitutional convention commission and making appropriation therefor.						
1915	202	*All*	Appointment of a commissioner of charities for the town of Moriah, Essex county, repealing L. 1896, ch 63.						
1915	205	*All*	City of Newburgh, special officers in Downing park, amending L. 1907, ch. 205, §§ 2, 3.						
1915	208	*All*	City of Cortland, sale of school buildings and sites authorized.						
1915	210	*All*	Endowment fund of the First Reformed Protestant Dutch Church of Chatham.						
1915	211	*All*	Conferring upon the superintendent of the poor of Westchester county probationary and advisory duties in relation to delinquent children.						
1915	212	*All*	Employing prisoners in improvement of roads and highways in Onondaga county, amending L. 1851, ch. 32, § 5.						
1915	215	*All*	Repealing L. 1880, ch. 150, in relation to sale of property for unpaid taxes in Orleans county and validating certain conveyances.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	220	*All*.....	City of Tonawanda, taxation for purposes of fire department, amending charter, L. 1905, ch. 357, tit. 17, §1, subd. 6, tit. 21, § 6.						
1915	222	*All*.....	City of Mount Vernon, assessments for local improvements, amending charter, L. 1892, ch. 182, §§ 168, 182.						
1915	225	*All*.....	Appropriation for maintenance and repair of public highways improved or constructed by state aid.						
1915	226	*All*.....	Appropriation for maintenance and repair of public highways improved or constructed by state aid.						
1915	229	*All*.....	Charter city of Saratoga Springs.						
		All......	[Previous charter (village) L.	1916	229[1]				
		120.....	1866, ch. 220, subsequent	....	...	....	1917	786	6
		All.....	charter, L. 1916, ch. 229.]...	1918	532[2]				
1915	230	*All*.....	Commission in charge of the celebration of the centenary of the battle of Plattsburgh, in relation to reports and compensation of employees, amending L. 1913, ch. 730, §§ 3, 4.						
1915	235	*All*.....	City of Binghamton authorized to issue temporary paving notes.						
1915	236	*All*.....	City of Binghamton, legalizing proceedings as to bond issue for school buildings.						
1915	237	*All*.....	Appropriation for the repair and improvement of mechanical and other structures and works on the canals.						
1915	239	*All*.....	Authorizing the consolidation of the corporations The Church Pension Fund and General Clergy Relief Fund.						
1915	244	*All*.....	Office of county clerk of Rensselaer county made a salaried office.						
1915	245	*All*.....	Legalizing certain maps and the filing thereof in the Onondaga county clerks office.						
1915	248	*All*.....	Legalizing contract between the trustees of public buildings and Will H. Low for making decorative mural paintings in legislative library.						

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[1] New charter.

[2] Police and Fire Pension Fund.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	249	*All*.....	City of Batavia, amending charter, generally, L. 1914, ch. 354.						
1915	250	*All*.....	Incorporating the union of Orthodox Jewish Congregations of America.						
1915	251	*All*.....	Authorizing the First Presbyterian Union Church of Owego, New York, to convey certain real property to the Owego Social Service Association.						
1915	252	*All*.....	Village of Herkimer, legalizing bond issue for extension of sewer system.						
1915	256	*All*.....	Incorporating the Associated Lodges of the Independent Order Brith Abraham of New York city.						
1915	258	*All*.....	Authorizing the village of Lake Placid, Essex county, to establish a public playground.						
1915	259	*All*.....	Authorizing the village of Lake Placid, Essex county, to establish a publicity fund.						
1915	260	*All*.....	Appropriation for making an enumeration of the inhabitants of the state.						
1915	261	*All*.....	Supplemental contracts for certain work done or materials furnished for construction or improvement of state highways.						
1915	262	*All*.....	Fonda, Johnstown and Gloversville Railroad Company authorized to apply to state comptroller for readjustment of franchise taxes paid.						
1915	263	*All*.....	Reviving and extending corporate existence of The Prudential Bond and Mortgage Company of Manhattan borough, New York city.						
1915	264	*All*.....	Court of claims to determine claims of Mary Ann Scozzafava, as administratrix.						
1915	265	*All*.....	Reappropriating unexpended balance of appropriation for Palisades Interstate Park.						
1915	267	*All*.....	Ceding to town of Smithtown, Suffolk county, certain land for protection of clamming, repealing L. 1914, ch. 442.						

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Statutes				**Amended or otherwise affected by**			**Expressly repealed by**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1915	268	*All*	City of Binghamton, establishing police pension fund, amending charter, L. 1907, ch. 751, tit. 17a (added).						
1915	276	*All*	City of Buffalo, collection and distribution of the tax on foreign fire insurance companies, amending charter, L. 1914, ch. 217, § 275, §§ 275a–275j (added).						
1915	277	*All*	Reappropriating unexpended balances of former appropriation for improvement of new state routes in the counties of Niagara and Orleans, amending L. 1914, ch. 275, § 1.						
1915	279	*All*	Municipal court of the city of New York, its justices and officers, repealing municipal Court Act, L. 1902, ch. 580						
		5, subd. c		....	...	....	1916	479	
		5, subd. c (added)		1916	479				
		5		1917	728				
		5, subd. c		1918	539				
		27, subd. 4 (added)		1916	610				
		118, subd. 3 (added)		1916	123				
		126		1917	611				
		142, subd. 2		1916	508				
		142, subd. 2		1918	503				
		142, subd. 3		1916	508				
1915	280	*All*	Reappropriating the unexpended balance of a former appropriation for monument to Twenty-fifth Regiment of New York Volunteer Cavalry.						
1915	283	*All*	Authorizing superintendent of public works to provide towing facilities on completed portions of Barge Canal.						
1915	284	*All*	City of New York, abolishing office of coroner and establishing office of chief medical examiner, amending charter and repealing certain sections, L. 1901, ch. 466; repealing L. 1882, ch. 410, §§ 1766–1779.						
1915	289	*All*	Releasing to county of Onondaga, for county road purposes, a portion of the grounds of the New York State Farm for Feeble-minded, in the town of Camillus.						
1915	291	*All*	Disposition of money from sale of common lands of town of Hempstead, Queens county, amending L. 1870, ch. 591, §§ 2, 4, 7.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	292	*All*.....	Edward Oliver restored to captain of national guard of state of New York.						
1915	301	*All*.....	Incorporating the Honor Roll						
		1.......	Relief Fund.................	1917	606				
1915	302	*All*.....	Physicians and surgeons to register authority to practice in county of Bronx.						
1195	303	*All*.....	Office of county clerk of						
		3.......	Dutchess county a salaried office.	1916	225				
1915	306	*All*.....	Authorizing transfer of lands of Kensico Cemetery, town of Mount Pleasant, Westchester county, to trustees of Saint Patrick's Cathedral in city of New York.						
1915	308	*All*.....	City of New York, serial bonds, amending charter, L. 1901, ch. 466, § 182.						
1915	309	*All*.....	City of New York, issue of corporate stock, amending charter, L. 1901, ch. 466, §§ 169, 189, 206, 229.						
1915	310	*All*.....	City of New York, police department, punishment, amending charter, L. 1901, ch. 466, § 302.						
1915	311	*All*.....	Reception of persons at municipal lodging houses in New York city, amending L. 1886, ch. 535, § 5.						
1915	312	*All*.....	Annual appropriation for American Museum of Natural History in Central Park, New York city, amending L. 1905, ch. 292, § 1.						
1915	314	*All*.....	City of New York, assessments for local improvements, amending charter, L. 1901, ch. 466, § 1043a (added).						
1915	316	*All*.....	Legalizing water bonds of the city of Plattsburgh.						
1915	324	*All*.....	Consolidation of Susquehanna Valley Electric Traction Company with Waverly, Sayre and Athens Electric Traction Company to form the Waverly, Sayre and Athens Traction Company, validated.						
1915	326	*All*.....	Providing for clearing, grading and improving the site of the old power house at Hawk and Elk streets in city of Albany.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	329	*All*.....	Salary of commissioner of the the poor in town of Fishkill, Dutchess county, amending L. 1857, ch. 89, § 6.						
1915	331	*All*.....	Nassau county, board of supervisors authorized to pay certain claims for sidewalks on county roads.						
1915	334	*All*.....	Reappropriating certain unexpended balances of a former appropriation for the New York State Training School for Girls at Hudson.[1]						
1915	335	*All*.....	Appropriation for the objects and purposes of the commissioners of Saratoga Springs state reservation.						
1915	336	*All*.....	Authorizing trustees of public buildings to examine and allow accounts for work or material furnished in the reconstruction of the capitol.						
1915	337	*All*.....	Authorizing the New York, Ontario and Western Railway Company to convey certain property to the Lehigh Valley Railway Company.						
1915	338	*All*.....	Appropriation for salaries and expenses of constitutional convention.						
1915	340	*All*.....	Changing boundary lines of Ninth and Tenth Congressional district of state of New York, created by L. 1911, ch. 890.						
1915	341	*All*.....	Disposition of property formerly in the office of the state fire marshal.						
1915	344	*All*.....	Authorizing commissioners of the land office to sell two lots on Wheeler avenue, city of Utica.						
1915	346	*All*.....	City of Buffalo, fire department, leave of absence, amending charter, L. 1914, ch. 217, § 270d.						
1915	349	*All*.....	City of Oswego, amending charter generally, L. 1895, ch. 394.						
1915	350	*All*.....	Appropriation for equipment of state departments in offices in the New York Telephone Company building in the city of Albany.						

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[1] Appropriation, L. 1913, ch. 790.

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Statutes				**Amended or otherwise affected by**			**Expressly repealed by**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1915	353	*All*	Fees of the clerk of the county of Bronx.						
1915	355	*All*	New York city, consolidation act, medical assistant to district attorney, amending L. 1882, ch. 410, § 1503a (added).						
1915	356	*All*	An act to incorporate the city of White Plains. [Previous charter (village) L. 1867, ch. 518.]						
		13		1917	381				
		58, 60		1916	167				
		64		1917	381				
		74		1916	167				
		74		1917	381				
		84-86		1916	167				
		87		1917	381				
		89		1916	167				
		98, 167, 197, 199, 200, 219, 230, 232, 233, 235		1917	381				
		257-266					1917	786	6
		267					1917	470	2
		267, 268					1917	786	6
		268a (added)		1917	470				
		272, 275		1917	381				
1915	359	*All*	City of Rochester, amending charter generally, L. 1907, ch. 755.						
		3					1917	786	6
1915	360	*All*	Legalizing conveyance of property of the Reformed Protestant Dutch Church of German Flats, Herkimer county.						
1915	362	*All*	Herkimer county, submission of proposition for tuberculosis hospital to voters.						
1915	363	*All*	Powers of the New York state commission for the blind, amending L. 1913, ch. 415, §§ 4, 5, 7, 9.						
1915	365	*All*	Care and maintenance of law library in Nassau county, amending L. 1903, ch. 315, § 2; §§ 3-5 (added).						
1915	370	*All*	Authorizing board of trustees of the New York State School of Agriculture at Morrisville to accept a deed of gift of certain lands in Madison county.						
1915	373	*All*	Employment of a woman parole officer at state farm, amending L. 1908, ch. 467, §10a (added).						
1915	374	*All*	City of Albany authorized to dedicate certain lands for public park.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1915	375	*All*.....	Board of estimate and apportionment of New York city to audit claim of Elizabeth Bischoff.						
1915	377	*All*.....	City of Elmira, amending charter generally, L. 1906, ch. 477.						
1915	378	*All*.....	City of New York, duties of board of estimate, amending charter, L. 1901, ch. 466, § 226.						
1915	387	*All*.....	Benevolent fund of late volunteer fire department of New York city, repealing L. 1886, ch. 15, § 7, relating to annual report.						
1915	389	*All*.....	Cost of and appropriation for reconstruction of old portion of Potsdam State Normal School, amending L. 1911, ch. 400, § 1.						
1915	391	*All*.....	Incorporating the Italian American Civic Association.						
1915	393	*All*.....	Appointment of deputy county treasurer for Monroe county, amending L. 1875, ch. 605, § 6a (added).						
1915	394	*All*.....	City of Rochester, creating art commission, amending charter, L. 1907, ch. 755, §§ 15, 16, 18; art. 19, §§ 560-565 (added).						
1915	396	*All*.....	Village of Ilion, compensation of policemen, amending charter, L. 1895, ch. 315, §§ 33, 34, 56, subd. 5.						
1915	397	*All*.....	City of Salamanca, construction of sewers, amending charter, L. 1913, ch. 507, § 64.						
1915	398	*All*.....	City of Hornell, salary of overseer of the poor, amending charter, L. 1906, ch. 288, § 58.						
1915	399	*All*.....	Treasurer's expenses for collection of taxes in city of Utica, amending L. 1865, ch. 659, § 7.						
1915	404	*All*.....	Taxation of certain real property in the county of Westchester.						
1915	405	*All*.....	Land maps in county of Kings, amending L. 1894, ch. 365, § 15.						
1915	406	*All*.....	Abolishing the office of collector in the village of Frankfort, Herkimer county.						

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1915	407	*All*	Incorporating the Church Peace Union (founded by Andrew Carnegie).						
1915	408	*All*	Appointment of clerks in office of district attorney of Richmond county, amending L. 1914, ch. 265, § 4.						
1915	409	*All*	Office of sheriff of Herkimer county, amending L. 1903, ch. 319, §§ 1, 3, 4–7.						
1915	410	*All*	Annexing to the county of Kings certain territory, constituting a part of the county of Queens.						
		1		1917	420				
1915	411	*All*	Legalizing proceedings and bond issue of the town of Waterford, Saratoga county, for acquiring toll bridge across Hudson river.						
1915	414	*All*	Town of Riverhead, Suffolk county, authorized to build and maintain town dock.						
1915	416	*All*	Authorizing the Governor to restore George W. Bishop to grade and rank formerly held by him in the national guard.						
1915	418	*All*	Legalizing proceedings and bond issue of the village of Arcade, Wyoming county, for widening certain state and county highways.						
1915	419	*All*	Powers and government of the Council of Jewish Women, and election of directors validated.						
1915	420	*All*	Incorporating the Woman's Board of Home Missions of the Presbyterian Church in the United States of America.						
		3		1916	195				
		3		1916	276[1]				
1915	421	*All*	Compensation and duties of the board of equalization of Oneida county, amending L. 1897, ch. 202, §§ 1–4, 5, 6, 7.						
1915	423	*All*	Legalizing proceedings and bond issue of the village of Long Beach, Nassau county, for improvement of streets.						
1915	425	*All*	Westchester county authorized to issue bonds to pay indebtedness arising from construction of sewers in the Bronx valley sanitary sewer district.						

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[1] Identical with L. 1916, ch. 195, except that word "of" is used in place of word "in."

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Statutes				Amended or otherwise affected by			Expres
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law
1915	429	*All*.....	Location of eastern terminal of bridge of Ontario-Niagara Connecting Bridge Company, amending L. 1914, ch. 420, § 1.				
1915	432	*All*..... All......	Requirements in the preparation of assessment rolls in the county of Nassau, and providing for the collection of taxes in such county.		 ...		 1916
1915	435	*All*.....	Establishment of indemnity fund for Grand Court of the State of New York of the Ancient Order of Foresters of America, amending L. 1895, ch. 106, §§ 3, 6.				
1915	436	*All*.....	City of Poughkeepsie, department of public works, amending charter, L. 1896, ch. 425, § 115.				
1915	437	*All*.....	Celebration of anniversary of battle of Lake Erie and memorial to Commodore Perry and his men, amending L. 1913, ch. 190, § 2.				
1915	441	*All*.....	Providing for the assessment and payment of unpaid taxes in Hamilton county.				
1915	442	*All*.....	Providing for a school building by the state on grounds of Great Meadow prison, Washington county.				
1915	448	*All*.....	Appraisal of lands, structures and waters for the use of the improved canals, amending L. 1908, ch. 195, §§ 2, 3.				
1915	450	*All*.....	City of Buffalo, repaving of Chippewa and Georgia streets.				
1915	451	*All*.....	Extending time for making final report of the commissioners to consolidate, codify and revise laws relating to estates of deceased persons and procedure and practice in surrogate's courts.				
1915	456	*All*.....	City of Poughkeepsie, department of public works, amending charter, L. 1896, ch. 425, § 103, subd. 7.				
1915	459	*All*.....	City of Cortland, issuing bonds for sewer construction, amending charter, L. 1900, ch. 160, § 76.				

The italicised matter following each chapter number indicates the part of such chapter treated as **private and local in its operation.**

Statutes				Amended or otherwise affected by			Expressly repe by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.
1915	461	*All*	State Engineer and Surveyor to investigate and report in relation to construction of a canal on the south side of Long Island.					
1915	462	*All*	Ceding to the city of Buffalo, by the state of New York, certain land for public street purposes.					
1915	464	*All*	Church Insurance Association, exemptions, amending L. 1891, ch. 134, §1.					
1915	471	*All*	City of Troy, taxes amending charter, generally, and repealing certain sections, L. 1892, ch. 670.					
1915	472	*All*	Collection of state and county taxes in city of Troy, repealing L. 1892, ch. 653.					
1915	473	*All*	Board of estimate and apportionment of New York city authorized to pay to widow unpaid compensation of Thomas C. O'Sullivan, late judge of the court of general sessions of the peace.					
1915	474	*All*	Releasing interest of state in certain real estate in the borough and county of Richmond to Martha E. K. Judge and Clara W. Clark.					
1915	477	*All*	Authorizing the comptroller to transfer moneys in the barge canal terminal sinking fund created by L. 1911, ch. 746; L. 1913, ch. 787.					
1915	478	*All*	City of Yonkers, taxes, amending charter, L. 1908, ch. 452, art. 5, § 9e.					
1915	481	*All*	Town board of the town of Brighton, Monroe county, authorized to designate one of its members to sign checks, contracts and other obligations.					
1915	484	*All*	Union free school district number four, town of Orangetown, Rockland county, continued as body corporate and repealing certain provisions of L. 1859, ch. 303.					

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				**Amended or otherwise affected by**			**Expressly repealed by**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1915	486	All	Exempt Volunteer Firemen's Association, Incorporated, of village of Charlotte, Monroe county, authorized to collect tax on foreign fire insurance conpanies.						
1915	488	*All*	Disposition of unnecessary canal terminal lands, structures or waters, amending L. 1911, ch. 746, § 8a (added).						
1915	489	*All*	County court of Saratoga county given jurisdiction over cases involving offenses against children under sixteen years of age.						
1915	490	*All*	Register of the county of New York authorized to destroy records of his office, repealing L. 1897, ch. 649.						
1915	496	*All*	Authorizing the American Scenic and Historic Preservation Society to acquire title to certain lands to be used as a part of Letchworth park.						
1915	500	*All*	City of New York, property for street cleaning purposes, amending charter, L. 1901, ch. 466, § 542.						
1915	504	*All*	Relief of town of Salisbury, Herkimer county, as to unpaid taxes.						
1915	507	*All*	Commissioners of the land office to sell certain lands used in connection with Sing Sing prison.						
1915	508	*All*	City of Buffalo, eminent domain, amending charter, L. 1891, ch. 105, § 418a (added), § 430.						
1915	509	*All*	Village of Medina, investment of sinking fund, amending charter, L. 1909, ch. 545, § 74 repealed; new § 74 (added).						
1915	510	*All*	Report and map of boundary line between counties of Greene and Schoharie becoming conclusive evidence, amending L. 1913, ch. 760, § 1.						
1915	511	*All*	Disposition of lands, structures and waters no longer needed for canal purposes, amending L. 1903, ch 147, § 5.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	512	All	City of New York, College of City of New York lands and buildings, amending charter, L. 1901, ch. 466, § 1128.						
1915	514	*All*	Village of Medina, amending charter, generally, L. 1909, ch. 545.						
1915	516	*All*	City of New York, Hunter College, amending charter, L. 1901, ch. 466, § 1140 repealed; new § 1140 added.						
1915	517	*All*	Authorizing trustees of police pension fund of the city of Elmira to pay a pension to Hazel Gradwell.						
1915	518	*All* 1	Extending time to the International Railway Company of Buffalo to complete its railroad in the city of Buffalo.	 1916	 169				
1915	519	*All*	City of Niagara Falls, board of grade crossing commissioners, amending charter, L. 1904, ch. 300, § 563 (added).						
1915	520	*All*	City of New Rochelle, amending charter, generally, and repealing certain sections, L. 1910, ch. 559.						
1915	522	*All* All	Cancellation of assessments made on account of paving certain streets in the city of Olean and providing for reassessment.	 1916	 531[1]				
1915	523	*All*	City of New York, cession of lands under water, amending charter, L. 1901, ch. 466, § 971a (added).						
1915	524	*All*	City of New York, extermination of mosquitoes, amending charter, L. 1901, ch. 466, § 949a (added)						
1915	525	*All*	City of Ogdensburg, amending charter, generally, and repealing certain sections, L. 1893, ch. 87.						
1915	526	*All*	Authorizing commissioners of the land office to sell certain lands to union free school district number three of the town of Charlotte, Chatauqua county.						

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[1] Proceedings relative to paving ratified

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	527	*All*	City of Syracuse, boundaries of the city and the Seventeenth and Nineteenth wards, amending charter, L. 1885, ch. 26, § 3, § 4, subd. 17.						
1915	528	*All*	Annexing land in town of Greenport, Columbia county, to city of Hudson.						
1915	529	*All*	Transfer of lands in Hudson city cemetery to trustees of Hudson fire department.						
1915	530	*All*	City of Olean, legalizing proceedings relative to paving and authorizing bond issue.						
1915	531	*All*	Inferior criminal courts act of city of New York, amending generally, and repealing certain sections, L. 1910, ch. 659.						
1915	532	*All*	Annexing part of town of New Hartford to city of Utica, amending L. 1913, ch. 307, §§ 1, 2.						
1915	533	*All*	Powers of the public administrator of the county of New York, amending L. 1898, ch. 230, § 18.						
1915	534	*All*	Rapid transit act, right to connect with railroad of a railroad corporation, amending L. 1891, ch. 4, § 32, subd. 3 (added).						
1915	535	*All*	Charter, city of Olean. [Previous charter, L. 1914, ch. 436.]						
		5		1916	543				
		24, 26		1918	108				
		33, 36, 37, 42, 45, 47-49		1916	543				
		54		1918	453				
		56, 68, 71, 78, subds. 5, 50		1916	543				
		89, 97, 99, 100, 102, 104, 110, 116, 117		1916	543				
		All		1915	717[1]				
		All		1916	531[2]				
		All		1917	100[3]				
		All		1917	101[3]				
		All		1917	452[4]				
1915	536	*All*	City of Batavia, amending charter, generally, L. 1914, ch. 354.						
1915	537	*All*	City of New York, award of damages caused by grading streets, amending charter, L. 1901, ch. 466, § 951.						

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[1] Improving Olean Creek.
[2] Bond issue for paving.
[3] Bond issue for paving East State street.
[4] Paving West Sullivan street.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	538	*All*	City of Watertown firemen's pension fund, amending charter, L. 1897, ch. 760; repealing L. 1907, ch. 258.						
1915	539	*All*	City of Watertown, public works, amending charter, L. 1897, ch. 760, §§ 109, 210.						
1915	540	*All*	City of Little Falls, legalizing a special city election and proceedings, including bond issue.						
1915	541	*All*	City of Auburn, firemen's pension fund, amending charter, L. 1906, ch. 185, § 118.						
1915	542	*All*	City of Ogdensburg, bond issue authorized for defraying city's share of expense of raising and lowering railroad tracks.						
1915	543	*All*	Rapid transit act, exchange of property, amending L. 1891, ch. 4, § 39, subd. 4a (added).						
1915	544	*All*	Rapid transit act, restoration of street or park surfaces, amending L. 1891, ch. 4, § 37, subd. 1, § 39, subd. 2.						
1915	545	*All*	Rapid transit act, assessment of cost and expense for railroad construction, amending, generally, L. 1891, ch. 4.						
1915	547	*All*	City of Beacon, amending charter, generally, L. 1913, ch. 539.						
1915	550	*All*	Civil service employees separated from service through abolition of department or office of the state restored to eligible list.						
1915	562	*All*	Powers of the board of commissioners of Interstate park, along palisades of Hudson river, amending L. 1900, ch. 170, § 2.						
1915	568	*All*	Releasing interest of state in certain property to heirs-at-law of Elizabeth Street.						
1915	570	*All*	Provisions for issuing bonds to amount of not to exceed twenty-seven million dollars in addition to bonds heretofore authorized, for improvement of Erie, Oswego and Champlain canals.						
1915	571	*All*	City of Rome, powers and duties of assessors, amending charter, L. 1904, ch. 650, § 51.						

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	572	*All*.....	City of Ithaca, deputy city clerk, amending charter, L. 1908, ch. 503, § 6; § 25a (added), § 122.						
1915	573	*All*.....	City of Rome, local improvements, amending charter, L. 1904, ch. 650, §§ 57, 178, 180, 212.						
1915	574	*All*.....	City of New York, public recreation commission, amending charter, L, 1901, ch. 466, §§ 630, 631; repealing § 629.						
1915	575	*All*.....	City of Oswego, fire and police pension fund, amending charter, L. 1895, ch. 394, tit. 8a. (§§ 213a-213g.)						
1915	576	*All*.....	City of Oswego, increasing contingent fund, amending charter, L. 1895, ch. 394, § 260, subd. 9.						
1915	577	*All*.....	City of Oswego, clerk hire to city chamberlain, amending charter, L. 1895, ch. 394, § 67.						
1915	578	*All*.....	City of Oswego, salary of city attorney, amending charter, L. 1895, ch. 394, § 102.						
1915	579	*All*.....	Extending the reformatory and correctional functions of workhouses, penitentiaries and reformatories in cities of first class and providing for the establishment of a parole commission.						
		2-6.....		1916	287				
1915	581	*All*.....	City of New York, clerks and officers of municipal court, amending charter, L. 1901, ch. 466, §§ 1373, 1378, 1383.						
1915	582	*All*.....	Use and occupancy of hall of records in New York county, amending L. 1907, ch. 712, § 1.						
1915	583	*All*.....	City of Plattsburg, city officers, taxes and indebtedness, amending charter, L. 1902, ch. 269, §§ 11, 39, 72, 73, 152, 174.						
1915	584	*All*.....	Changing plans for canal bridge over Erie canal in village of Yorkville, and reappropriating money therefor.[1]						

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[1] Construction authorized L. 1913, ch. 745.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1915	585	*All*	Authorizing comptroller to transfer money raised for improvement of Cayuga and Seneca canals, to the canal debt sinking fund.						
1915	587	*All*	Membership of the board of state college of forestry at Syracuse University, amending L. 1911, ch. 851, § 3.						
1915	590	*All*	Rapid transit act, change of contracts, amending L. 1891, ch. 4, § 37a (added).						
1915	591	*All*	City of New York, paving streets and payment of cost, amending charter, L. 1901, ch. 466, § 948.						
1915	592	*All*	City of New York, correction of taxes and assessments, amending charter, L. 1901, ch. 466, § 897.						
1915	593	*All*	City of New York, acquiring land for parks and public places, amending charter L. 1901, ch. 466, §§ 970a, 970b (added).						
1915	594	*All*	City of New York, tax on foreign fire insurance companies, amending charter, L. 1901, ch. 466, tit. 6.						
1915	595	*All*	Damages to real property fronting upon streets approaching Manhattan bridge over East river, amending L. 1911, ch. 737, § 1.						
1915	596	*All*	City of New York, acquiring title to real property for public purposes, amending charter, L. 1901, ch. 466, §§ 1435-1448 (repealed), §§ 1431-1453 (added).						
1915	597	*All*	City of New York, acquisition of wharf property, amending charter, L. 1901, ch. 466, § 822.						
1915	598	*All*	City of New York, assessments for local improvements, amending charter, L. 1901, ch. 466, § 1019a.						
1915	599	*All*	Indexing and reindexing instruments relating to land and liens thereon in the county of Bronx, amending L. 1893, ch. 536, §§ 3, 10.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1915	600	*All*.....	City of New York, collection of unpaid personal taxes, amending charter, L. 1901, ch. 466, § 926.						
1915	601	*All*.....	Greater New York charter, uncollectible personal taxes, amending L. 1901, ch. 466, § 248						
1915	602	*All*.....	City of New York, disposal of personal property of schools, amending charter, L. 1901, ch. 466, § 1066.						
1915	603	*All*.....	City of Norwich, lighting fund, amending charter, L. 1914, ch. 34, § 313.						
1915	604	*All*.....	Rapid transit act, method of acquiring title to real property, amending L. 1891, ch. 4.						
1915	605	*All*.....	City of New York authorized to acquire title to certain state lands for opening and extending Rosebank avenue in the borough of Richmond.						
1915	606	*All*.....	City of New York, acquiring title in fee for streets and parks, amending charter, L. 1901, ch. 466, §§ 970–1011 (repealed), §§ 969–1016 (added).						
1915	607	*All*.....	Greater New York charter, commissioners of deeds, amending L. 1901, ch. 466, § 58.						
1915	609	*All*.....	City of Canandaigua, amending charter, generally, L. 1913, ch. 371.						
1915	610	*All*.....	City of Fulton, amending charter, L. 1902, ch. 63, §§ 12, 48, 50, 120, 280.						
1915	611	*All*..... 49–51...	City of Kingston, amending charter, generally, and repealing certain sections, L. 1896, ch. 747.	....	....	....	1917	783	6
1915	612	*All*.....	Office and courts of justice of the peace in the city of Mount Vernon abolished, and additional jurisdiction conferred upon acting city judge.						
1915	616	*All*.....	Acquisition of a site for a memorial to Thomas Macdonough by the Plattsburg battle commission, amending L. 1914, ch. 95, §§ 1, 2.						

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	624	*All*	Additional appropriation for New York state constitutional convention commission.						
1915	640	*All*	Extending time for filing claims for compensation or damages on account of the construction of improved canals and canal terminals.						
		1		1916	420				
1915	645	*All*	Increasing number of justices of the supreme court in the Ninth judicial district.						
1915	646	*All*	Board of estimate and apportionment of city of New York authorized to retire upon pension persons employed in fire department.						
1915	647	*All*	City court of Troy.						
		27		1916	224				
		173		1916	224				
		312, subds. 3, 4		1916	224				
		324		1916	224				
1915	649	*All*	Amount of bonds to be issued for the vocational high school building in city of Syracuse, amending L. 1914, ch. 299, §§ 2, 3, 4, 11.						
1915	655	*All*	Sanitary trunk sewer and sanitary outlet sewer in Westchester county, amending L. 1905, ch. 646, §§ 18, 19, §§ 19a–19c (added).						
1915	656	*All*	Authorizing the canal board to compromise and settle claim against the receivers of the United Surety Company as one of the sureties upon the bond of Shanley-Morrissey, Incorporated.						
1915	657	*All*	Court of claims to hear and determine claims for damages for death or personal injury by reason of conduct of an automobile race at state fair grounds.						
1915	658	*All*	Court of claims authorized to determine claim of John J. Munro for damages while employed at Kings Park State Hospital.						
1915	659	*All*	Authorizing the canal board to compromise and settle claims against the surety on the bonds of Shanley-Morrissey, Incorporated.						

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	660	*All*.....	Water rates and exempting property of water board from taxation in city of Elmira, amending L. 1913, ch. 660, §§ 2, 15.						
1915	661	*All*.....	Authorizing the canal board to compromise and settle claim against the Bankers' Surety Company, as one of the sureties upon the bond of Shanley-Morrissey, Incorporated.						
1915	666	*All*.....	Construction of roadway and pathway by International Bridge Company, amending L. 1857, ch. 753, § 15a (added).						
1915	668	*All*.....	Notice, distribution and publication of amendments to the constitution submitted by the constitutional convention to the people for approval.						
1915	671	*All*.....	Maps or plans of building lots in city of Schenectady to be approved by city engineer before filing in county clerk's office.						
1915	672	*All*.....	Regulation of traffic in liquor under liquor tax law, for the year nineteen hundred and fifteen.						
1915	675	*All*..... All......	Qualification of certain city officers in city of Watervliet, amending charter, L. 1911, ch. 184, §§ 8, 115, 202.	....	...	....	1918	462	206
1915	676	*All*.....	Creating commissioners for the purpose of acquiring title to Middleport cemetery, village of Middleport, Niagara county, and removing and reinterring remains.						
1915	680	*All*.....	Continuing the state athletic commission, amending L. 1911, ch. 779, §§ 1, 2, 9.						
1915	681	*All*.....	Appropriation to reimburse the county of Warren on account of construction of a county highway.						
1915	682	*All*.....	Reappropriating unexpended balances of former appropriations for construction and improvement of portions of state routes.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	683	*All*.....	Reappropriating an unexpended balance for construction and improvement of state routes two and six.						
1915	684	*All*.....	Reappropriating an unexpended balance for construction and improvement of public highways in Essex and Warren counties.						
1915	685	*All*.....	Appropriation for payment of interest on Palisades Interstate Park debt.						
1915	686	*All*.....	Appropriation for payment of interest on Saratoga Springs state reservation debt.						
1915	687	*All*.....	Appropriation for payment of principal and interest on Saratoga Springs state reservation debt.						
1915	688	*All*.....	Appropriation for payment of interest on bonds for improvement of highways.						
1915	689	*All*.....	Appropriation for payment of interest on bonds and temporary certificates of the comptroller for the improvement of highways.						
1915	690	*All*.....	Appropriation for payment of interest on bonds for improvement of highways.						
1915	691	*All*.....	Appropriation for payment of interest on debt for improvement of Cayuga and Seneca canals.						
1915	692	*All*.....	Appropriation for payment of interest on debt for improvement of Cayuga and Seneca canals.						
1915	693	*All*.....	Reappropriating unexpended balance of a former appropriation for improvement of Erie, Oswego and Champlain canals.						
1915	694	*All*.....	Appropriation for payment of interest on debt for construction of barge canal terminals.						
1915	695	*All*.....	Appropriation for payment of interest on debt for improvement of Erie, Oswego and Champlain canals.						
1915	696	*All*.....	Appropriation for payment of interest on debt for improvement of Erie, Oswego and Champlain canals.						

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	697	*All*.....	Appropriation for payment of interest on debt for construction of barge canal terminals.						
1915	698	*All*.....	Appropriation to reimburse Philip Becker for money paid by him to the state for a grant of land under water.						
1915	699	*All*.....	Appropriation and reappropriation for bridge over Black river and Moose river at Lyons Falls.						
1915	700	*All*.....	Construction of foot bridge over Cayuga and Seneca canal, at Seneca Falls and making an appropriation therefor.						
1915	701	*All*.....	Lowering the canal bridge over Cayuga and Seneca canal in village of Waterloo.						
1915	702	*All*.....	Removal of certain highway and farm bridges over abandoned sections of the canals.						
1915	703	*All*.....	Creating a commission relative to highway bridge over Mohawk river and barge canal between city of Schenectady and village of Scotia.						
1915	704	*All*.....	Construction of new steel plate girder bridge over Erie canal at village of Whitesboro.						
1915	705	*All*.....	Repair of canal wall feeder on Main street in city of Oneida.						
1915	706	.... All......	Appropriation for improvement of the Erie, Oswego and Champlain canals.	1916	8[1]				
1915	707	*All*.....	Improvement of Dry river in city of Watervliet and making appropriation therefor.						
1915	708	*All*.....	Appropriation for certain apparatus, equipment and protection on completed sections of barge canal.						
1915	709	*All*.....	Superintendent of public works authorized to continue work of improving Fulmer creek in Herkimer county.						
1915	710	*All*.....	Appropriation to improve drainage from lands of the Matteawan State Hospital.						
1915	711	*All*.....	Providing for representation of the state at the national Negro exposition at Richmond, Virginia.						

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[1] Appropriation.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	712	*All*.....	Appropriation for equipment of buildings and grading of the grounds of the Buffalo State Normal and Training School.						
1915	713	*All*.....	Appropriation for the construction and equipment of the Mohansic State Hospital at Yorktown.						
		All......		1917	238[1]				
1915	714	*All*.....	Appropriation for state's share of expense of maintaining county roads.						
1915	715	*All*.....	Appropriation for payment of assessment for paving Richmond avenue, city of Lockport, adjoining the Erie canal.						
1915	716	*All*.....	Providing for construction of bridge over a portion of the Oswego river and the barge canal at Minetto, Oswego county.						
1915	717	*All*.....	City of Olean authorized to make improvements to restrain Allegany river and Olean creek and apportionment of cost between state and city.						
		All......		1916	410[2]				
1915	718	*All*.....	Transfer of certain territory in county of Essex to county of Hamilton, and from county of Hamilton to county of Essex and changing the dividing line between such counties.						
1915	720	*All*.....	Making applicable the office of county clerk to counties embraced within city of New York, amending L. 1896, ch. 989, § 1.						
1915	721	*All*.....	State comptroller to revise and readjust franchise tax against the Aird-Don Company of Troy.						
1915	722	*All*.....	Contracts in relation to construction of court house in New York county, amending L. 1903, ch. 336, § 10a (added.)						
1915	723	*All*.....	New York city freight terminals act, amending L. 1911, ch. 776, § 8b.						

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[1] Unexpended balances reappropriated for Utica State Hospital.

[2] Legalizing bond issue.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1915	724	*All*.....	Jurors and commissioners of jurors in Kings county, amending L. 1902, ch. 564, §§ 1-3.						
1915	725	*All*.....	Appropriations for the support of government..............						
		2.......		1916	534				
1915	726	*All*.....	Appropriations for supplying deficiencies and for expenses of government.						
1915	727	*All*.....	Appropriations for construction, improvements, repairs and equipment at various state institutions.						
		1.......		1916	626[1]				
1915	728	*All*.....	Reappropriating unexpended balances of former appropriations.						
1915	729	*All*.....	Direct tax levied for support of government.						
1916	1	*All*.....	Appropriation for expenses of investigation of the civil lists of the state by the civil service committee of the senate.						
1916	2	*All*.....	Authorizing the village of Peekskill to issue bonds to improve South street.						
1916	3	*All*.....	Authorizing the village of Peekskill to issue bonds to pay indebtedness of fire department.						
1916	4	*All*.....	Village of Peekskill, issue and payment of refunding bonds, amending charter, L. 1883, ch, 117, tit. 7, § 2, subd. 4.						
1916	6	*All*.....	Authorizing village of Alexandria Bay to establish a publicity fund.						
1916	8	*All*.....	Appropriation for improvement of Erie, Oswego and Champlain canals.						
		All......		1918	152[2]				
1916	9	*All*.....	City of Albany, authorized to sell certain real estate to the the county of Albany.						
1916	11	*All*.....	County of Albany authorized to sell certain real estate to the city of Albany.						
1916	15	*All*.....	Bond issue of the town of Aurora legalized.						
1916	16	*All*.....	Panama-Pacific International Exposition commission, salaries or expenses and when report shall be made, amending L. 1912, ch. 541, §§ 3, 5.						

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[1] Appropriation for Delhi State School of Agriculture.
[2] Money reappropriated.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				**Amended or otherwise affected by**			**Expressly repealed by**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1916	17	*All*.....	Greater New York charter, taxes upon real property, amending L. 1901, ch. 466, § 914.						
1916	18	*All*.....	Authorizing the county of Westchester to issue bonds for refunding certificates of indebtedness issued to pay for armory site.						
1916	22	*All*.....	Authorizing the commissioners of the land office to grant certain lands under water to village of Tarrytown.						
1916	23	*All*.....	Authorizing the county of Westchester to reimburse the town of Mamaroneck for attorney's fees and expenses in an action brought by John Carroll, plaintiff.						
1916	24	*All*.....	Village of Ilion, boundaries and assessors, amending charter, L. 1895, ch. 315, §§ 1, 26.						
1916	26	*All*.....	Village of Cobleskill, annual and special elections, amending charter, L. 1868, ch. 136, tit. 2, § 3.						
1916	27	*All*.....	Incorporating the Andrew Freedman Home.						
1916	28	*All*.....	Village of Port Chester, amount of bonds for paving or macadamizing streets, amending L. 1899, ch. 517, § 19.						
1916	29	*All*.....	Extending time of village of Port Chester to lay out and open highways over lands ceded to it.						
1916	30	*All*.....	Legalizing bonds of the village of Le Roy for water system.						
1916	33	*All*.....	Authorizing town of Eastchester, Westchester county, to purchase fire apparatus and issue bonds to pay for same.						
1916	34	*All*.....	Authorizing town of Eastchester, Westchester county, to purchase fire apparatus and issue bonds to pay for same.						
1916	35	*All*.....	Appropriation for enforcement of the fire provisions of the Conservation Law and protecting state land.						
1916	37	*All*.....	Authorizing village of Ossining to issue bonds to pay floating indebtedness.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	38	*All*	Legalizing the appointment of Doctor Alva G. Dunbar, as superintendent of the Oswego County Tuberculosis Hospital.						
1916	39	*All*	Authorizing the adjutant-general to procure two automobile trucks for military use.						
1916	40	*All*	Legalizing payment of certain claims of employees of election board of Rensselaer county.						
1916	41	*All*	City of Albany, fixing boundary lines and including therein parts of towns of Bethlehem, Colonie and Guilderland, amending charter, L. 1883, ch. 298, tit. 2, § 1.						
1916	43	*All*	Street improvements in city of Albany, amending L. 1904, ch. 466, § 2.						
1916	44	*All*	Annual tax levy for construction and maintenance of sanitary trunk sewer in Westchester county, amending L. 1905, ch. 646, § 14.						
1916	45	*All*	Appropriation for expenses of the forestry bureau in Conservation Department.						
1916	46	*All*	Improvement of the waterways of the town of Hempstead, Nassau county, amending L. 1914, ch. 151, §§ 1, 2.						
1916	48	*All*	Legalizing the election of superintendent of highways in the town of Brookhaven, Suffolk county.						
1916	49	*All*	Directing supervisor of town of Coeymans, Albany county, to pay over certain moneys to village of Ravena.						
1916	55	*All*	Village of Fredonia, bond issue for erection of library building amending charter, L. 1894, ch. 480, art. 8, §§ 7–10 (added).						
1916	56	*All*	Consolidating several organizations affiliated and incorporating the Order of Eastern Star of the state of New York.						
1916	57	*All*	Board of supervisors of Albany county empowered to convey certain lands to the Albany Medical College.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1916	60	*All*.....	City of Plattsburg, creating city hall commission, amending charter, L. 1902, ch. 269, tit. 16, §§ 185-190 (added).						
1916	61	*All*.....	Department of public works, city of Syracuse, improvements without contract, amending L. 1905, ch. 684, §§ 7, 30.						
1916	63	*All*.....	City of Oneida, amending charter generally, L. 1911, ch. 648.						
1916	64	*All*.....	Legalizing bonds of the village of Silver Creek, issued to pay for improving Central avenue and Park place.						
1916	65	*All*.....	Authorizing the city of Newburgh to issue bonds for purchase of fire apparatus.						
1916	66	*All*.....	Consolidating Broome County Humane and Charitable Association and incorporating the Broome County Humane Society and Relief Association.						
1916	67	*All*.....	Office of sheriff of Monroe county, amending generally, L. 1902, ch. 490.						
1916	68	*All*.....	Authorizing town board of the town of Glenville, Schenectady county, to release to the state rights to Freeman's bridge.						
1916	69	*All*.....	Authorizing the city of Hornell to issue bonds to redeem outstanding and unpaid indebtedness.						
1916	70	*All*.....	City of Jamestown, amending charter generally, L. 1907, ch. 387.						
1916	73	*All*.....	Legalizing bonds of the city of Batavia for installation of filtration and water plant.						
1916	74	*All*.....	Ontario county taxes, tax sales and redemption of land sold for taxes.						
1916	75	*All*.....	Abolishing the holding of trial terms of supreme court in the city of Olean, amending L 1902, ch. 274, § 1.						
1916	76	*All*.....	Authorizing trustees of Kensico cemetery to grant land to town of Mount Pleasant, Westchester county for highway purposes.						

The italicised matter following each chapter number indicates the part of such chapter tr private and local in its operation.

Statutes				Amended or otherwise affected by			Exp
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law
1916	78	*All*.....	City of Amsterdam, maximum amount of annual tax levy, amending charter, L. 1911, ch. 242, tit. 9, § 110.				
1916	82	*All*.....	Incorporating The American Society of Church History, Incorporated.				
1916	83	*All*.....	Salaries of sheriff and certain employees of sheriff's office of Richmond county, amending L. 1896, ch. 392, § 1.				
1916	85	*All*.....	City of Yonkers, local improvements, amending charter, L. 1908, ch. 452, art. 6, § 18.				
1916	88	*All*.....	Reappropriating unexpended balance of moneys to improve the channel of Three Mile Harbor, in the town of East Hampton.				
1916	89	*All*.....	City of Syracuse, sprinkling streets, amending L. 1906, ch. 75, § 8.				
1916	92	*All*.....	Monroe county, special funds in certain departments, amending L. 1900, ch. 639, § 9a (added).				
1916	94	*All*.....	Greater New York charter, bureau of audit, amending L. 1901, ch. 466, § 151, subd. 4.				
1916	95	*All*.....	Greater New York charter, police commissioner may offer rewards, amending L. 1901, ch. 466, § 305.				
1916	97	*All*.....	Custodians of primary records of Niagara county to correct and complete enrollment books in one election district.				
1916	98	*All*.....	Repealing certain acts providing for exemptions of certain taxes and assessments in city of Albany and providing for uniform rate of taxation throughout the city of Albany.				
1916	101	*All*.....	Village of Gowanda, bond issue for improving streets legalized.				
1916	102	*All*.....	City of Elmira authorized to transfer tuberculosis sanitorium property to Chemung county.				
1916	103	*All*.....	Executive board of New York state convention of Universalists to elect directors of the Nathaniel Stacey Memorial association, Incorporated.				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1916	105	*All*.....	Providing for the assessment of property and collection of taxes and assessments in the several towns of Westchester county.						
		1.......		1917	66				
		23......		1918	260				
1916	106	*All*.....	Appropriation for expenses of the legislature.						
1916	107	*All*.....	Providing for a county auditor in the county of Suffolk......						
		2–7.....		1917	58				
1916	110	*All*.....	Abolishing the office of coroner in the county of Jefferson.						
1916	111	*All*.....	St. George's Brotherhood of the town of Flushing, Queens county, amending L. 1871, ch. 416, §§ 3, 4.						
1916	112	*All*.....	Greater New York charter, land for parks, streets and public places, amending L. 1901, ch. 466, §§ 970a, 970b (added).						
1916	113	*All*.....	Pelham board of sewage disposal works abolished.						
1916	115	*All*.....	Greater New York charter, appropriation for observance of Memorial Day, amending L. 1901, ch. 466, § 245.						
1916	116	*All*.....	Reappropriating an unexpended balance of a former appropriation for celebrating the centenary of the battle of Plattsburg.						
1916	123	*All*.....	New York city municipal court, juror's fees, amending L. 1915, ch. 279, § 118, subd. 3 (added).						
1916	124	*All*.....	Fixing a fiscal year for officers and departments of county of Westchester.						
1916	126	*All*.....	Providing for returning to the general fund unexpended balance of certain appropriations, and repealing acts making such appropriation.						
1916	131	*All*.....	Town of Islip, Suffolk county, abolishing office of trustees and transferring duties and powers to town board, amending L. 1857, ch. 503, § 3.						
1916	133	*All*.....	City of Mount Vernon authorized to issue bonds to meet temporary deficiencies.						
1916	136	*All*.....	Unpaid taxes of the town of Webb, Herkimer county, added to future assessment roll.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	138	*All*.....	Baptist Missionary Convention of the state of New York, amending L. 1898, ch. 143, §§ 1-5.						
1916	141	*All*.....	Authorizing the commissioners of the land office to grant certain lands to Kings Park free library and Kings Park fire department.						
1916	142	*All*.....	City of Poughkeepsie, amending charter generally, L. 1896, ch. 425.						
1916	146	*All*.....	Application of endowments of the Independent Order of Benai Berith, amending L. 1878, ch. 188, § 2.						
1916	148	*All*.....	City of Cortland, in relation to indebtedness, repealing L. 1900, ch. 160, § 256.						
1916	149	*All*.....	City of Cortland, repairing streets, amending charter, L. 1900, ch. 160, § 87						
1916	150	*All*.....	Little Falls and Johnstown Railroad Company, time to begin and finish construction of its road extended.						
1916	153	*All*.....	County of Nassau authorized to issue bonds to pay its proportion of the bonded indebtedness of Queens county.						
1916	154	*All*.....	Regulating sessions of board of supervisors of Hamilton county.						
1916	156	*All*.....	Simplified form of government in cities of second and third class, amending L. 1914, ch. 444, § 15.						
1916	161	*All*.....	City of Rome, improvement of highways and streets, amending charter, L. 1904, ch. 650, §§ 178, 180.						
1916	162	*All*.....	City of Buffalo authorized to issue bonds for public trunk sewers, repealing L. 1912, ch. 373.						
1916	165	*All*.....	Providing for two additional justices of the supreme court in the eighth judicial district.						
1916	167	*All*.....	City of White Plains, annual estimate and tax budgets, amending charter, L. 1915, ch. 356, §§ 58, 60, 74, 84, 85, 86, 89.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	169	*All*	International Railway Company of Buffalo, extending time to complete its railways, amending L. 1915, ch. 518, § 1.						
1916	172	*All*	Charter, city of Sherrill.						
		25		1917	371				
		41		1918	227				
		94a, 98a–98h (added)		1917	371				
		100, 102		1918	227				
		109, 111		....	...	....	1917	371	
		118, 125		1917	371				
		143		1918	227				
		150, 171		1917	371				
		201		1918	227				
		207		1917	371				
1916	174	*All*	Appropriation for highways and bridges on Indian reservations.						
1916	180	*All*	Payment of compensation of certain unskilled laborers, by supervisors of Onondaga county, amending L. 1906, ch. 10, §§ 8a (added), 7, 8.						
1916	181	*All*	Appointment of an attorney by county treasurer of Broome county, amending L. 1902, ch. 22, §§ 1, 3.						
1916	183	*All*	City of Dunkirk authorized to issue bonds to pay for sewer and paving.						
1916	186	*All*	Constituting the Baldwinsville union free school district, repealing L. 1864, ch. 94; L. 1885, ch. 21.						
1916	187	*All*	Stenographers in the office of district attorney of Kings county, amending L. 1896, ch. 772, § 2.						
1916	188	*All*	Incorporating the Buckhorn association.						
1916	189	*All*	City of Auburn, contingent expenses, amending charter, L. 1906, ch. 185, § 75.						
1916	190	*All*	Greater New York charter, commissioner of deeds, amending L. 1901, ch. 466, § 58.						
1916	191	*All*	Greater New York charter, receiver of taxes and collector of assessments and arrears, amending L. 1901, ch. 466, §§ 152, 154.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	192	*All*.....	Greater New York charter, licensing massage parlors, amending L. 1901, ch. 466, § 51.						
1916	193	*All*.....	Greater New York charter, use of lands and buildings of Hunter College, amending L. 1901, ch. 466, § 1140.						
1916	194	*All*.....	Tax for school purposes in school districts in town of Onondaga, Onondaga county, amending L. 1866, ch. 839, § 9.						
1916	195	*All*.....	Control of Woman's board of home missions of the Presbyterian Church in the United States of America, amending L. 1915, ch. 420, § 3.						
1916	197	*All*.....	Payment to Mary E. Delaney balance of compensation of John J. Delaney, late justice of the supreme court, by the city and county of New York.						
1916	198	*All*.....	Village of Fairport, Monroe county, amending charter generally, L. 1867, ch. 330.						
1916	200	*All*.....	City of Middletown, amending charter generally, L. 1902, ch. 572.						
1916	201	*All*.....	Greater New York charter, pensioners holding office, amending L. 1901, ch. 466, § 1560.						
1916	202	*All*.....	Village of Watkins, abolishing office of police justice, amending charter, L. 1861, ch. 125, tit. 3, § 1, repealing tit. 8, §§ 6–9.						
1916	204	*All*.....	City of Watertown, city's share of expense of street or sewer improvements, amending charter, L. 1897, ch. 760, §§ 215, 216.						
1916	206	*All*.....	City of Amsterdam authorized to pave Guy Park avenue and to issue bonds to meet the cost thereof to the city.						
1916	208	*All*.....	Greater New York charter, reinstatement of retired members of police force, amending L. 1901, ch. 466, § 354, subd. 5 (added).						
1916	209	*All*.....	Public cemetery of the town of Hempstead, Queens county, amending L. 1869, ch. 76, §§ 1, 2, 5.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	211	*All*.....	Village of Ossining authorized to issue bonds to pay floating indebtedness and for other purposes.						
1916	212	*All*.....	Village of Churchville, Monroe county, limiting powers of trustees to levy tax, amending charter, L. 1867, ch. 941, tit. 6, § 1.						
1916	213	*All*.....	Village of Mount Kisco authorized to issue bonds to pay cost of improving Mill street.						
1916	214	*All*.....	City of Albany authorized to exchange property on Western avenue with the United Traction Company.						
1916	218	*All*.....	Appropriation for maintenance and repair of improved state and county highways.						
1916	221	*All*.....	Granting certain lands under water to village of Port Chester for a public dock or wharf.						
1916	224	*All*.....	City court of Troy, amending L. 1915, ch. 647, §§ 27, 173, 312, 324.						
1916	225	*All*.....	Fees to be charged by county clerk of Dutchess county, amending L. 1915, ch. 303, § 3.						
1916	227	*All*.....	Legalizing proceedings of village of East Rochester, in relation to paving and bond issue therefor.						
1916	229	*All*..... 23......	City of Saratoga Springs, amending charter generally, L.1915, ch. 229.	....	...	....	1917	786	6
1916	232	*All*.....	Authorizing the counties of Otsego and Delaware to acquire property and rights of the Oneonta and Franklin Turnpike Company and issue bonds to pay for same, repealing L. 1831, ch. 235; L. 1835, ch. 69, and L. 1845, ch. 57.						
1916	233	*All*.....	Town of Remsen, Oneida county, permitted to transfer Fairchild's cemetery property to the Fairchild's cemetery association.						
1916	234	*All*.....	Collection of taxes in Monroe county, amending L. 1884, ch. 107, § 4.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	236	*All*..... 8.......	Providing for the management and maintenance of a penitentiary and workhouse in the county of Westchester.	1917	68				
1916	237	*All*.....	Grand court of the state of New York of the Foresters of America, amending L. 1895, ch. 106, title, § 3.						
1916	239	*All*.....	Towns of Oyster Bay and North Hempstead, Nassau county, to provide the trustees of the Jones fund with necessary funds to conduct almshouse.						
1916	241	*All*.....	Fees charged by county clerk of Livingston county, amending L. 1903, ch. 200, § 3.						
1916	242	*All*..... 2.......	Creating the office of commissioner of charities and corrections in the county of Westchester, and to prescribe the powers and duties of such officer.	1917	6				
1916	244	*All*.....	Department of assessment and taxation of the city of Syracuse, foreclosure of tax liens, amending L. 1906, ch. 75, § 44, 45.						
1916	245	*All*.....	County of Westchester authorized to issue bonds for construction and maintenance of sewers in the Bronx valley sanitary sewer district.						
1916	246	*All*.....	Towns in Suffolk county to provide for extermination of mosquitoes.						
1916	250	*All*..... 1.......	Board of supervisors of Onondaga county authorized to acquire by purchase necessary lands for rights of way for the Solvay-State Fair-Syracuse county highway.	1917	208				
1916	251	*All*.....	Construction, maintenance and operation of a railroad upon Front street in city of Troy, amending L. 1851, ch. 255, § 1.						
1916	253	*All*.....	City of Elmira authorized to issue bonds for paving purposes.						
1916	255	*All*.....	Providing for towing facilities on completed sections or portions of Barge Canal, and making appropriation therefor.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	256	*All*.....	Union free school district number nine in the town of Perinton, Monroe county, to borrow money for the relief of said district.						
1916	258	*All*.....	Authorizing a contract for the construction of additional accommodations at Long Island State Hospital.						
1916	259	*All*.....	Correction of excessive taxes levied in the county of Rensselaer.						
1916	260	*All*.....	City of Buffalo, amending charter, generally, L. 1914, ch. 217.						
1916	263	*All*.....	Village of Peekskill, village elections, amending charter, L. 1883, ch. 117, tit. 2, § 4.						
1916	264	*All*.....	Sale of water in the city of Watervliet, amending L. 1914, ch. 428, § 15.						
1916	265	*All*.....	Village of Port Chester, powers of board of trustees, amending charter, L. 1868, ch. 818, tit. 3, § 1, subd. 21.						
1916	266	*All*.....	Authorizing the county of Albany to sell certain lands to the state.						
1916	267	*All*.....	City of Oneonta, sewage disposal system, amending charter, L. 1908, ch. 454, § 75.						
1916	268	*All*.....	Incorporating the United Synagogue of America.						
1916	269	*All*.....	Ceding certain lands in city of Plattsburg, Clinton county, to the United States of America for a site for a memorial in honor of Commodore Thomas Macdonough.						
1916	270	*All*.....	Directing supervisor of town of Perrysburg, Cattaraugus county, to pay over certain moneys to treasurer of the village of Perrysburg.						
1916	271	*All*.....	City of Schenectady, appointment of a woman commissioner of education, amending L. 1908, ch. 481, § 1.						
		All.....		....	...	....	1917	786	6
1916	272	*All*.....	Village of Waterloo authorized to issue bonds to pay cost of paving portions of West Main street.						
1916	273	*All*.....	City of Troy, assessment of shares of bank stock, amending charter, L. 1892, ch. 670, tit. 7, § 3.						

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Statutes				Amended or otherwise affected by			Express
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law
1916	274	*All*.....	Collection of taxes in town of Oswegatchie, Saint Lawrence county, repealing L. 1866, ch. 127.				
1916	276	*All*.....	Control of Women's Board of Home Missions of the Presbyterian Church in the United States of America, amending L. 1915, ch. 420, § 3.				
1916	277	*All*.....	Village of Peekskill, dividing awards for street widening, damages, amending charter, L. 1883, ch. 117, § 8 (added).				
1916	279	*All*.....	City of Dunkirk, improvement of Central avenue and bond issue therefor, amending charter, L. 1909, ch. 538, § 149 (added).				
1916	280	*All*.....	Legalizing official acts of notaries public and commissioners of deeds.				
1916	281	*All*.....	City of Jamestown, boundaries, amending charter, L. 1907, ch. 387, § 2.				
1916	282	*All*.....	City of Jamestown, paving, amending charter, L. 1907, ch. 387, §§ 179, 183.				
1916	283	*All*.....	City of Jamestown, tax on foreign fire insurance companies, amending charter, L. 1907, ch. 387, § 280a.				
1916	284	*All*.....	City of Syracuse, intercepting sewer board to regulate flow of Onondaga creek and bond issue therefor, amending L. 1907, ch. 356, §§ 4, 9, 9a (added), 9b (added), 11.				
1916	285	*All*.....	City of Ogdensburg, sprinkling streets, amending charter, L. 1893, ch. 87, § 89h (added).				
1916	286	*All*..... All......	City of Watervliet, collection of taxes, amending charter L. 1911, ch. 184, §§ 275–279 (repealed), §§ 275, 276 (added).	....	...	....	1918
1916	287	*All*.....	Extending reformatory and correctional functions of workhouses, penitentiaries and reformatories in cities of the first class, amending L. 1915, ch. 579, §§ 2–6.				
1916	288	*All*.....	City of Geneva, police pension fund, amending charter, L. 1897, ch. 360, §§ 166, 167.				

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Statutes				**Amended or otherwise affected by**			**Expressly repealed by**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1916	289	*All*	Homeopathic Medical College in New York city, amending L. 1869, ch. 191, § 2; L. 1887, ch. 515, § 4.						
1916	292	*All*	City of Jamestown, police pension fund, amending charter, L. 1907, ch. 387, tit. 2a, §§ 40–45 (added).						
1916	293	*All*	Board of education of Dunkirk union free school district to submit proposition for public school building in First ward of Dunkirk.						
1916	294	*All*	City of Dunkirk, raising money for purchse of lands, amending charter, L. 1909, ch. 538, § 170.						
1916	296	*All*	Appropriation for the state reservation at Saratoga Springs.						
1916	302	*All*	Defining the district benefited by and to be assessed for taking lands for a new street in the city of Buffalo.						
1916	303	*All*	Cost and expense of lands for widening Elmwood avenue in the city of Buffalo.						
1916	304	*All*	City of Ogdensburg, completing and filing tax roll, amending charter, L. 1893, ch. 87, § 47a (added).						
1916	306	*All*	Levying of unpaid taxes and assessments in the village of Mohawk, Herkimer county.						
1916	307	*All*	Tax sales by treasurer of the county of Tompkins.						
1916	308	*All*	Acceptance by the state for public park of lands in town of Granby, Oswego county.						
1916	310	*All*	City court of city of Mount Vernon, amending charter, L. 1892, ch. 182, §§ 56, 62, 85, 104, 108.						
1916	311	*All*	City of Mount Vernon authorized to issue bonds for repairing Columbus avenue.						
1916	312	*All*	Extending the corporate existence of the Sigel Real Estate and Investment Company.						
1916	324	*All*	Beneficiaries of the firemen's pension fund in the city of Albany, amending L. 1914, ch, 285, § 5.						
1916	325	*All*	Construction of a sewer in First avenue in city of Albany and issue of bonds.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	326	*All*	City of Johnstown, amending charter generally, L. 1905, ch. 593.						
1916	338	*All*	City of Jamestown, bond of city treasurer, amending charter, L. 1907, ch. 387, §§ 38, 127.						
1916	339	*All*	Incorporating the Isaac L. Rice Memorial Hospital for Convalescents.						
1916	342	*All*	Creating a commission to negotiate for the transfer of the quarantine establishment to the United States.						
1916	351	*All*	Relief of Seneca county in relation to excessive taxes levied in the year nineteen hundred and fifteen.						
1916	352	*All*	Incorporating the "Grimes Foundation."						
1916	354	*All*	Christ Church in city of Hudson, permanent endowment fund, amending L. 1902, ch. 330, § 1.						
1916	356	*All*	Legalizing proceedings of village of Greenwich, Washington county, relative to special election and bond issue.						
1916	361	*All*	Election of laymen, members of the Methodist Episcopal church, as trustees, amending L. 1870, ch. 101, §§ 1, 2, 3, 5.						
1916	362	*All*	Authorizing sale of surplus electric current at Clinton prison to village of Dannemora.						
1916	374	*All*	Commissioner of public works of city of Utica authorized to remove bodies from old cemetery and acquire lands for public park.						
1916	375	*All*	City of Auburn, storm sewers, and bond issue therefor, amending charter, L. 1906, ch. 185, § 104a (added).						
1916	376	*All*	Indexing instruments relating to lands and liens thereon in Kings county, amending L. 1894, ch. 365, § 10.						
1916	378	*All*	Making an appropriation for expenses of commissioners appointed to prepare index of the session laws, and repealing L. 1913, ch. 673.						
1916	383	*All*	City of Dunkirk, amending charter generally, L. 1909, ch. 538.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	387	*All*.....	Reappropriating certain unexpended balances of former appropriations for the purchase of books and apparatus for schools.						
1916	388	*All*.....	City of Auburn, appointment and election of city officers, amending charter, L. 1906, ch. 185, § 13.						
1916	390	*All*.....	Incorporating the New York State Association of the United Master Butchers of America, Incorporated.						
1916	391	*All*.....	City of Corning authorized to borrow money to pay current indebtedness and deficits.						
1916	399	*All*.....	Chamberlain of the city of New York, authorized to cancel certain worthless mortgages.						
1916	400	*All*.....	Extending time for making final report of the commissioners designated to revise the laws relating to the estates of deceased persons and the procedure and practice in surrogate's court.						
1916	401	*All*.....	Authorizing the board of supervisors of Albany county to convey penitentiary grounds to city of Albany.						
1916	409	*All*.....	City of Hornell, amending charter generally, L. 1906, ch. 288.						
1916	410	*All*.....	Legalizing special city election held for city of Olean and bond issue for abatement of floods						
1916	414	*All*.....	City of Salamanca, amending charter generally, L. 1913, ch. 507, §§ 50, 113, 150, subd. 3, 157.						
1916	415	*All*.....	City of Syracuse, department of public works, amending generally, L. 1905, ch. 684.						
1916	418	*All*.....	Releasing to Fred Cowen the interest of the state in certain real estate in the village of Medina.						
1916	419	*All*.....	Releasing to Emma Nehlsen the interest of the state in certain real estate in the borough and county of Queens, city of New York.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	420	*All*.....	Claims for compensation or damages in connection with the construction of improved canals and canal terminals, amending L. 1915, ch. 640, § 1.						
1916	425	*All*.....	City of Ithaca, expense of sidewalk construction, amending charter, L. 1908, ch. 503, § 154.						
1916	428	*All*.....	City court of Buffalo, appeals, amending L. 1909, ch. 570, § 55.						
1916	429	*All*.....	Creating a firemen's relief and pension fund for fire department of city of Lockport.						
1916	430	*All*.....	City of Lockport, legalizing sale of a portion of a street to the Niagara Textile Company.						
1916	431	*All*..... All.....	City of Lockport, amount of tax to be raised for schools, amending L. 1847, ch. 51, § 15.	....	...	....	1917	786	6
1916	432	*All*.....	City of Lockport, policemen as detective sergeants, amending charter, L. 1911, ch. 870, § 113.						
1916	433	*All*.....	City of Lockport, fire department, amending charter generally, L. 1911, ch. 870.						
1916	434	*All*.....	City of North Tonowanda, amending charter generally, L. 1907, ch. 752.						
1916	435	*All*.....	Exempt Firemen's Association of the City of Niagara Falls authorized to collect tax on foreign fire insurance companies.						
1916	436	*All*.....	City of Schenectady, commissioners of deeds, amending charter, L. 1907, ch. 756, § 201a.						
1916	437	*All*.....	Municipal court of the city of Syracuse, temporary designation of judges, amending L. 1906, ch. 520, § 3a (added), § 37.						
1916	449	*All*.....	Annexing part of the town of Deerfield to the city of Utica.						
1916	455	*All*.....	City of Fulton, police pension fund, amending charter, L. 1902, ch. 63, §§ 139–147 (added).						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	456	*All*.....	City of Fulton, firemen's pension fund, amending charter, L. 1902, ch. 63, §§ 148, 149, 149a–149g (added).						
1916	457	*All*.....	City of Fulton, bond issue to pay indebtedness authorized.						
1916	464	*All*..... 15, 16...	City of Kingston, amending charter generally, L. 1896, ch. 747.	....	...	....	1917	786	6
1916	476	*All*.....	City of Mount Vernon, penalty for nonpayment of taxes, amending charter, L. 1892, ch. 182, § 51.						
1916	477	*All*.....	City of Mount Vernon, increasing amount of bonds for repaving streets, amending L. 1909, ch. 361, § 1.						
1916	479	*All*.....	City of New York, municipal court district boundaries in borough of Brooklyn, amending L. 1915, ch. 279, tit. 1, § 5, subd. c.						
1916	480	*All*.....	Justices of the appellate division of the supreme court in the first department may retire employees for incapacity, amending L. 1911, ch. 855, §§ 1, 2.						
1916	481	*All*.....	City chamberlain of the city of Oswego authorized to pay salary due Arthur Owens.						
1916	486	*All*.....	City of Rochester, amending charter generally, L. 1907, ch. 755.						
1916	487	*All*.....	City of Syracuse, court of special sessions, amending L. 1910, ch. 676, §§ 1, 2, 4a, 24, 30.						
1916	488	*All*..... All.....	City of Schenectady, department of public instruction, amending L. 1908, ch. 481, § 2.	....	...	....	1917	786	6
1916	489	*All*.....	City of Utica, annual appropriations for firemen's pension fund, amending L. 1907, ch. 161, § 2, subd. 8 (added).						
1916	490	*All*.....	Benevolent fund of late volunteer fire department in New York city, amending L. 1866, ch. 633, §§ 1, 2, 4.						
1916	491	*All*.....	Greater New York charter, block map of taxes and assessments, amending L. 1901, ch. 466, §§ 891, 891a (added); repealing L. 1892, ch. 542.						

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	492	*All*.....	Greater New York charter, department of correction, amending L. 1901, ch. 466, § 695, repealing § 321.						
1916	493	*All*.....	Greater New York charter, powers of boards of local improvements, amending L. 1901, ch. 466, § 435.						
1916	494	*All*.....	Greater New York charter, ceding lands to United States, amending L. 1901, ch. 466, § 218a (added).						
1916	495	*All*.....	Laying out upon the map and plan of the city of New York, Remsen avenue, in the borough of Brooklyn, and acquisition of title thereto.						
		All......		1917	383[1]				
1916	496	*All*.....	Greater New York charter, permits for removal of pavements, amending L. 1901, ch. 466, § 391.						
1916	497	*All*.....	Greater New York charter, powers of board of estimate and apportionment, amending L. 1901, ch. 466, §§ 242a, 242b.						
1916	498	*All*.....	Board of estimate and apportionment of city of New York authorized to allot certain lands to the International Garden Club for horticultural garden.						
1916	499	*All*.....	Grant to the city of New York certain land at Hunt's Point in borough of the Bronx....						
		Title....		1918	514				
		1		1918	514				
1916	500	*All*.....	City of New York authorized to adjust questions of title, taxes and assessments affecting property at Coney Island, borough of Brooklyn.						
1916	501	*All*.....	Greater New York charter, expense of moving or altering water mains, amending L. 1901, ch. 466, §§ 946, 947.						
1916	502	*All*.....	Greater New York charter, appointment of director of the port, amending L. 1901, ch, 466, § 118a (added).						
1916	503	*All*.....	Greater New York charter, construction of buildings and their use and inspection, amending L. 1901, ch. 466.						
1916	508	*All*.....	City of New York, municipal court, amending L. 1915, ch. 279, § 142, subds. 2, 3.						

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[1] Construction of sewers in and paving Remsen avenue.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	509	*All*	Granting and releasing to city of New York certain lands under water of Eastchester creek by commissioners of land office.						
		1		1918	509				
1916	510	*All*	City of New York authorized to acquire a site for use as a farm colony for female prisoners.						
1916	511	*All*	Expenditures by the court house board in the county of New York, amending L. 1903, ch. 336, § 13a (added).						
1916	512	*All*	Greater New York charter, powers of board of estimate and apportionment as to public improvements, amending L. 1901, ch. 466, § 247.						
1916	513	*All*	Greater New York charter, filing of maps showing lay-out of streets upon private property, amending L. 1901, ch. 466, § 1540.						
1916	514	*All*	Greater New York charter, recording and indexing instruments affecting land, amending L. 1901, ch. 466 ch. 24 (added).						
1916	515	*All*	Greater New York charter, penalty for failure to report marriage and births, amending L. 1901, ch. 466, § 1239.						
1916	516	*All*	Greater New York charter, duties of board of assessors, amending L. 1901, ch. 466, §§ 943, 947, 949, 951.						
1916	517	*All*	Greater New York charter, commissioners of accounts, amending L. 1901, ch. 466, §§ 119, 195.						
1916	519	*All*	Legalizing contracts made by railway terminal station commission of city of Buffalo, amending L. 1911, ch. 842, §§ 1, 3, 10, 11.						
1916	520	*All*	City of Canandaigua, officers, amending charter, L. 1913, ch. 371, §§ 13, 123, 240.						
1916	525	*All*	Salary of sheriff of county of New York, amending L. 1890, ch. 523, §§ 1, 5.						
1916	526	*All*	Greater New York charter, penitentiary, workhouse, and reformatory for misdemeanants, amending L. 1901, ch. 466, § 712a (added).						

The italicised matter following each chapter number indicates the part of such chapter treated as spec private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repeale by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	527	*All*	Additional supply of water for New York city, amending L. 1905, ch. 724, §§ 11, 42.						
1916	528	*All*	Greater New York charter, department of bridges, amending L. 1901, ch. 466, §§ 96, 100, 594, 595, 599, 601, 602, 603.						
1916	529	*All*	Greater New York charter, bureaus in the department of finance, amending L. 1901, ch. 466, § 151, subds. 7, 8 (added).						
1916	530	*All*	Charter city of Niagara Falls.						
		7, subd. 1	[Previous charter, L. 1904, ch. 300.]	1917	442				
		44, subds. 1, 5, 7		1917	442				
		68, subd. 1		1917	442				
		84, 85, 90, 92		1917	442				
		92		....	...	....	1917	786	
		123, 125, 130		1917	442				
		179		....	...	....	1917	442	
		204, 205, 213		1917	442				
		214		....	...	....	1917	442	
		242, 246, 254, 257		1917	442				
		281–285		....	...	....	1917	786	
		285, subds. 13, 14		....	...	....	1917	442	
		286		1917	442	21			
		286, 287		....	...	....	1917	786	
		287, subd. 5		....	...	....	1917	442	
		288		....	...	....	1917	786	
		289		1917	442	23			
		289–291		....	...	....	1917	786	
		292		1917	442	24			
		292		....	...	....	1917	786	
		293		1917	442	25			
		293, 294		....	...	....	1917	786	
		294a–294c (added)		1917	442	26			
1916	531	*All*	Proceedings relative to paving certain streets in the city of Olean ratified and bond issue in anticipation of collection of assessments validated.						
1916	534	*All*	Salaries and compensation of teachers in the State Normal College and State Normal Schools, amending L. 1915, ch. 725, § 2.						
1916	539	*All*	County of Rensselaer authorized to pay pension to Calvin J. Green on account of disability incurred while deputy sheriff.						
1916	540	*All*	Greater New York charter, aldermanic districts and districts for local improvements, amending L. 1901, ch. 466, §§ 19, 425.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	541	*All*	Collection of taxes in the towns and tax districts in the county of Nassau, and repealing L. 1915, ch. 432.						
		1		1917	297				
		1, 2		1918	221				
		4		1917	297				
		5		1918	221				
		6, 15, 18, 25, 26		1917	297				
		27a (added)		1917	297				
		28		1917	297				
		28a (added)		1918	221				
		29, 30, 31		1917	297				
		31, subds. 2–6		1918	221				
		31, subd. 7 (added)		1918	221				
		33		1917	297				
		33		1918	221				
		49, 62, 71		1917	297				
1916	542	*All*	County of Nassau, legalizing publication of election notices in nineteen hundred and eleven.						
1916	543	*All*	City of Olean, amending charter generally, L. 1915, ch. 535.						
1916	544	*All*	Releasing to William J. Park interest of state in certain real estate in city of Buffalo.						
1916	545	*All*	Incorporating the Institute of Public Service.						
1916	557	*All*	Releasing to Anna Wagner interest of state to certain real estate in New York city.						
1916	558	*All*	Appropriation for builidng at the New York agricultural experiment station.						
1916	559	*All*	Authorizing the adjutant-general to settle claim of Frederic S. Greene, a former captain in national guard.						
1916	560	*All*	Authorizing the adjutant-general to hear and determine the application of Alice Harvey for pension.						
1916	561	*All*	Authorizing the adjutant-general to hear and determine the application of Mary O'Donnell for pension.						
1916	563	*All*	City of Troy authorized to improve and regulate river and dock front and create a harbor and dock commission.						
1916	569	*All*	Provision for issuing bonds to the amount of not to exceed ten million dollars for the acquisition of lands for state park purposes and provide for the submission of the same to the people.						
		All		1917	146[1]				
		All		1917	147[2]				
		All		1918	353[3]				
		All		1918	368[4]				

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[1] Appropriation.

[2] Extension of Palisades Interstate Park.

[3] Appropriation for interest.

[4] Sinking fund.

The italicised matter following each chapter number indicates the part of such chapter treated as special private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	574	*All*.....	Legalizing action of the town board of the town of Long Lake, Hamilton county, in auditing accounts of Ben Lahey.						
1916	575	*All*.....	Charter city of Newburgh. [Previous charter, L. 1907, ch. 203; subsequent charter, L. 1917, ch. 590.]						
		80–84...		....	...	....	1917	786	6
		All......		....	...	....	1917	590	19
1916	576	*All*.....	Damages for changing and regulating railroad crossings in city of Buffalo, amending L. 1888, ch. 345, § 12.						
1916	580	*All*.....	Greater New York charter, College of the City of New York, amending L. 1901, ch. 466, § 1132.						
1916	583	*All*.....	Office of sheriff of Suffolk county, amending generally, L 1902, ch. 131.						
1916	591	*All*.....	Providing for an additional justice of the supreme court in the third judicial district.						
1916	592	*All*.....	Greater New York charter, regulating use of streets, amending L. 1901, ch. 466, § 50.						
1916	594	*All*.....	Commission on new prisons reorganized and providing for establishment of a new farm and industrial prison and construction of new buildings at Sing Sing prison; making appropriations ($400,000); repealing L. 1906, ch. 670, L. 1910, ch. 365.						
		4.......		1917	390				
1916	597	*All*.....	Appropriation for highway improvement..............						
		All......		1918	103[1]				
1916	599	*All*.....	Preserving waters of Bronx river from pollution, purchase and condemnation of lands, amending generally, L. 1907, ch. 594.						
1916	600	*All*.....	Office of register of city and county of New York, board of register and official searches, amending L. 1884, ch. 531, §§ 5, 9.						
1916	601	*All*.....	Use of the water supply of New York city by municipal corporation in Westchester county, amending L. 1905, ch. 724, § 40.						

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[1] Reappropriated.

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	602	*All*	Greater New York charter, water charges and water meters, amending L. 1901, ch. 466.						
1916	603	*All*	Commission to investigate and report upon construction of a highway bridge over the Mohawk river and barge canal between Schenectady and village of Scotia.						
1916	604	*All*	Price of illuminating gas to consumers in the city of New York, amending L. 1906, ch. 125, § 1, subds. 1, 2.						
1916	610	*All*	Municipal court of the city of New York, deposition of person who expects to be a party to an action, amending L. 1915, ch. 279, § 27, subd. 4 (added).						
1916	611	*All*	Greater New York charter, police department, amending L. 1901, ch. 466, § 288.						
1916	612	*All*	Metering of illuminating gas in the city of New York, amending L. 1906, ch. 125, §§ 3–5, renumbered §§ 5–7, §§ 3, 4 (added).						
1916	613	*All*	Greater New York charter, payment of pensions of retired public school teachers, amending L. 1901, ch. 466, § 1092c (added).						
1916	614	*All*	Authorizing the board of estimate and apportionment of New York city to hear and determine claim of The John H. Parker Company.						
1916	615	*All*	Greater New York charter, powers of certain boards, amending L. 1901, ch. 466, §§ 47, 169, 189.						
1916	616	*All*	Greater New York charter, reinstatement of policemen, amending L. 1901, ch. 466, § 1543c (added).						
1916	617	*All*	Police commissioner of New York city may rehear charges and reinstate John C. McGee, formerly a patrolman.						
1916	618	*All*	Police commissioner of New York city may rehear charges and reinstate John H. Downs, formerly a patrolman.						

The italicised matter following each chapter number indicates the part of such chapter treat private and local in its operation.

Statutes				Amended or otherwise affected by			Expres
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**
1916	619	*All*	Police commissioner of New York city may rehear charges and reinstate Hugh McIver, formerly a patrolman.				
1916	620	*All*	Police commissioner of New York city may rehear charges and reinstate John P. Kilcommons, formerly a hostler in the police department.				
1916	621	*All*	Police commissioner of New York city may rehear charges and reinstate James Quigley, formerly a patrolman.				
1916	626	*All*	Appropriation for new buildings at State School of Agriculture and Domestic Science at Delhi, amending L. 1915, ch. 727, § 1.				
1916	627	*All*	Appropriation to pay expenses of Alfred D. Bell, incurred in contest for his seat as member of assembly.				
1916	628	*All* All	Appropriation for improvement of Erie, Oswego and Champlain canals.	 1918	 152[1]		
1916	629	*All*	Appropriation for the New York State Veterinary College.				
1916	630	*All*	Appropriation for expenses of the civil service committee of the Senate in continuing its investigation into the civil service of the state.				
1916	631	*All*	Appropriation to pay expenses incurred by Alvah H. Doty, in investigating affairs of the health officer of the port of New York.				
1916	632	*All*	Appropriation for the establishment of a fish hatchery in the city of Dunkirk.				
1916	633	*All*	Appropriation for contributions of the state for repair and improvement of town highways.				
1916	635	*All*	Appropriation for the survey of lands under water.				
1916	636	*All*	Appropriation to reimburse the city of Mechanicville for certain moneys expended on behalf of the state				
1916	637	*All*	Providing for monument to the one hundred and fourth regiment of infantry, New York volunteers, upon the battlefield of Antietam, and appropriation therefor.				

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[1] Money reappropriated.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1916	638	*All*.....	Appropriation for preparing a schedule of registration fees to be paid by auto-trucks and omnibuses.						
1916	639	*All*.....	Appropriation for the New York State School of Agriculture on Long Island.						
1916	640	*All*.....	Appropriation for an addition or new buildings for the State Normal School at New Paltz.						
1916	641	*All*.....	Appropriation for expenses in connection with the butter and egg investigation conducted by the attorney-general.						
1916	642	*All*.....	Appropriation from the sinking funds to pay interest on the state debt.						
1916	643	*All*.....	Appropriation for expenses of joint committee of the legislature to investigate report of the board of statutory consolidation.						
1916	644	*All*.....	Appropriation to pay an assessment levied against the state by the city of Troy for River street pavement.						
1916	645	*All*.....	Appropriation for mobilization, encampment and field exercise of the national guard of the state.						
1916	646	*All*.....	Appropriations for support of government of the state.						
1916	p. 2505......		Establishing and defining boundary line between the town of Bedford and the town of North Castle in the county of Westchester.						
1916	p. 2507.......		Altering and establishing the boundary line between the town of Minerva and the town of Newcomb in Essex county.						
1917	1	*All*.....	Appropriations for wages of employees at the state hall before beginning of the next fiscal year.						
1917	3	*All*.....	Appropriation ($1,000,000) for the expenses of national guard, naval militia, volunteer or other organizations called into service on orders of President of United States or of the governor of state of New York.						
		All......		1918	348[1]				

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[1] Reappropriated.

The italicised matter following each chapter number indicates the part of such chapter treat private and local in its operation.

Statutes				Amended or otherwise affected by			Expres
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**
1917	5	*All*..... 4, 5, 6, 8, 9.......	Creating the office of county auditor in the county of Onondaga and prescribing his powers and duties.	1918	191		
1917	6	*All*.....	Payment of expenses of maintenance of institutions under charge of commissioner of charities and corrections in county of Westchester, amending L. 1916, ch. 242, § 2.				
1917	7	*All*.....	Village of Fredonia, amending charter generally, L. 1894, ch. 480.				
1917	8	*All*.....	Contracts and payments for certain buildings in Westchester county constructed by building commission, amending L. 1915, ch. 111, § 4.				
1917	9	*All*.....	Number of firemen and their duties of the Mazeppa fire engine company of Nyack, amending L. 1861, ch. 87, § 3.				
1917	11	*All*.....	Issuance and sale of bonds by the village of Washingtonville for the purchase of fire apparatus legalized.				
1917	12	*All*.....	City of New York, authorized to cede or grant to the United States certain land or lands under water in Jamaica bay, borough of Queens.				
1917	14	*All*.....	Legalizing proceedings of the town of Yorkshire, in county of Cattaraugus and the issuance of bonds for construction of bridges.				
1917	15	*All*.....	Issuing of bonds for construction of sewers and sewage disposal works in the village of Port Chester, amending L. 1912, ch. 155, § 3.				
1917	16	*All*.....	Legalizing proceedings of the town of Genesee Falls, Wyoming county, in the issuance and sale of bonds for proportionate share of cost of erecting bridge across Genesee river.				
1917	17	*All*.....	Legalizing proceedings of town of Bennington, Wyoming county, in the issuance and sale of bonds for building certain bridges.				

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	21	*All*.....	Care and maintenance of prisoners by the sheriff of Ulster county, amending L. 1906, ch. 65, § 8.						
1917	22	*All*.....	Village of Cooperstown authorized to issue bonds to provide money for street improvement.						
1917	29	*All*.....	Legalizing proceedings of the village of Penn Yan in paving Main street, and confirming and providing for collection of assessment.						
1917	30	*All*.....	Legalizing the issuance of bonds of the village of Nassau, county of Rensselaer, for increasing water supply.						
1917	31	*All*.....	Legalizing bonds of the village of Akron for new street lighting system.						
1917	33	*All*.....	Defining the employment of Daniel McCarthy as a guard at Sing Sing prison, as hazardous under workmen's compensation law.						
1917	35	*All*.....	Village of Cooperstown authorized to borrow money for the reconstruction of sewer system.						
1917	40	*All*.....	Authorize the town of Yorktown, in county of Westchester, to issue bonds for the purpose of conducting the proceedings brought against board of assessors of Yorktown by the people of the state of New York.						
1917	43	*All*.....	Village of Peekskill, Westchester county, authorized to issue bonds to pay expense of improving South street						
1917	45	*All*.....	Appropriations and reappropriations for expenses of government and supplying deficiencies in former appropriations.						
1917	48	*All*.....	College entrance diplomas granted to pupils qualified for university scholarships.						
1917	51	*All*.....	Mapping of certain canal lands and lands adjacent thereto, amending L. 1910, ch. 199, §§ 1, 2; § 3 (added); § 3 renumbered 4, §§ 4, 5 renumbered 5, 6.						

The italicised matter following each chapter number indicates the part of such chapter treated as speci private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1917	56	*All*.....	Commissioners of the land office authorized to quitclaim to the abutting owners the interest of the state in and to portion of lands taken for Lewiston Heights-Lewiston state highway number 5590, route 18, situate in town of Lewiston, county of Niagara.						
1917	57	*All*.....	City of Gloversville, amending charter generally, L. 1899, ch. 275, § 70a (added), § 101a (added); §§ 105, 170, 173; § 173a (added), §§ 193, 211, 226.						
1917	58	*All*....	County auditor in the county of Suffolk, amending L. 1916, ch. 107, §§ 2–7						
1917	59	*All*.....	Town of Gardiner, in the county of Ulster, authorized to issue bonds to pay indebtedness due county of Ulster by reason of cancellation of taxes by comptroller.						
1917	60	*All*.....	Town of Shawangunk, in county of Ulster, authorized to issue bonds to pay indebtedness due Ulster county by reason of cancellation of taxes by comptroller.						
1917	61	*All*.....	Proceedings of the board of supervisors of the county of Tompkins in changing the time for holding town meetings in such county legalized.						
1917	62	*All*.....	Board of elections of Dutchess county authorized to complete the enrollment and enrollment books in nine election districts of said county.						
1917	63	*All*.....	Greater New York charter, rights of purchaser of tax lien, amending L. 1901, ch. 466, § 1032.						
1917	64	*All*.....	Greater New York charter, emergency police, amending L. 1901, ch. 466, § 308a (added).						
1917	66	*All*.....	Preparation of tax map by town board in the several towns of Westchester county, amending L. 1916, ch. 105, § 1.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1917	67	*All*.....	Legalizing the issuance of certificates of indebtedness of the town of Fallsburgh, in county of Sullivan, and provide for payment of such certificates and interest.						
1917	68	*All*.....	Contracts for the keep of prisoners in penitentiary and workhouse in the county of Westchester, amending L. 1916, ch. 236, § 8.						
1917	70	*All*.....	Buildings used and occupied by the commissioner of corrections of Westchester county, amending L. 1915, ch. 29, § 2.						
1917	73	*All*.....	Limitation of indebtedness by the city of New Rochelle, amending charter, L. 1910, ch. 559, § 122 (added).						
1917	75	*All*.....	Charge for publishing notice of sale of land for unpaid taxes in the county of Dutchess, amending L. 1883, ch. 263, § 8.						
1917	77	*All*.....	Board of supervisors of Rockland county authorized to allow claim for expenses in preparation of certain indexes in office of county clerk.						
1917	78	*All*.....	Village of Port Chester authorized to issue bonds for the payment of certificates of indebtedness issued to meet deficiences.						
1917	79	*All*.....	County treasurer of county of Nassau authorized to borrow money to pay certain county obligations.						
1917	82	*All*.....	Board of water commissioners of village of Ossining authorized to issue bonds for the purpose of funds to refund or pay certain outstanding bonds of the village.						
1917	83	*All*.....	Appropriation ($5,000) for participation of the state in the ceremonies, attending the inauguration of the President of the United States.						
1917	85	*All*.....	Power to convey or mortgage real estate by the Diocesan Missions of Long Island, amending L. 1902, ch. 394, § 6.						
1917	86	*All*.....	Compensation of policemen in the village of Ossining, amending charter L. 1910, ch. 667, § 31, subd. 1.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	87	*All*.....	Issuance of bonds of the county of Chenango for purchase of land and construction of tuberculosis hospital legalized.						
1917	88	*All*.....	Time of election of officers of the Manhattan Eye and Ear Hospital, amending L. 1869, 584, § 3.						
1917	89	*All*.....	Legalizing bonds issued by the town of Freedom, county of Cattaraugus.						
1917	90	*All*.....	Town of Middlebury, Wyoming county, authorized to pay to the village of Wyoming certain money collected on account of highway purposes.						
1917	93	*All*.....	Supervisor of the town of Salisbury, Herkimer county, directed to make an account of unpaid taxes and add to the assessment roll.						
1917	95	*All*.....	Management of funds and property of the board of education of the Methodist Episcopal Church, amending L. 1869, ch. 182, § 5; repealing § 8a.						
1917	100	*All*.....	Proceedings relative to widening pavement of East State street in the city of Olean legalized and issue of bonds authorized.[1]						
1917	101	*All*.....	Proceedings, contracts, certificates of indebtedness and payments in paving and improving East State street in the city of Olean legalized and the issue of bonds authorized.[1]						
1917	102	*All*.....	Charter of city of Oneida, compensation of city officers and expenditures for the city, amending L. 1911, ch. 648, §§ 14, 33, 47, subd. 29, 48.						
1917	103	*All*..... All......	Providing for taking a census and inventory of the military resources of the state and making an appropriation.	1917	409[2]				
1917	104	*All*.....	Appropriations for the maintenance, repair and reconstruction of improved state and county highways.						

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[1] Olean charter, L. 1915, ch. 535.

[2] Supplementary to L. 1917, ch. 103.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	107	*All*.....	Proceedings of the board of supervisors of Suffolk county in authorizing the use of the Campbell system of indexes in the office of county clerk of said county legalized.						
1917	108	*All*.....	Charter village of Whitesborough, propositions to be submitted at village elections, amending L. 1859, ch. 10, § 5.						
1917	112	*All*.....	City of Syracuse, jurisdiction of court of special sessions in abandonment proceedings, amending L. 1910, ch. 676, § 20a (added).						
1917	113	*All*.....	Department of public works of city of Syracuse, payments to contractors, amending L. 1905, ch. 684, § 30.						
1917	114	*All*.....	Charter city of Albany, apportionments and assessments for public improvements, amending L. 1883, ch. 298, tit. 9, § 31.						
1917	115	*All*.....	City of Poughkeepsie, cost of street improvements, amending charter, L. 1896, ch. 425, § 105.						
1917	116	*All*.....	Incorporating the Saint Paul's Church Cemetery Association of Paris Hill.						
1917	117	*All*.....	Powers of the General Theological Seminary of the Protestant Episcopal Church in the United States enlarged as to the investment of funds.						
1917	118	*All*.....	County of Onondaga authorized to take and hold real and personal property in settlement of certain claims growing out of the construction of the Onondaga sanitorium.						
1917	121	*All*.....	City of Cortland authorized to issue bonds to pay various indebtedness and deficits.						
1917	123	*All*.....	City of Cortland, maximum amount of annual city tax levy, amending charter, L. 1900, ch. 160, § 53, subd. 8.						
1917	125	*All*.....	Village of Mohawk, powers, duties and compensation of officers to the cemetery commissioners, amending charter, L. 1844, ch. 157, § 17, subd. 17.						

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	131	*All*.....	Town of Saugerties, police justice, amending L. 1861, ch. 31, §§ 2, 3, 4, 8.						
1917	132	*All*.....	Income of and amount of real estate of the Actors' Fund of America, amending L. 1882, ch. 327, § 4.						
1917	133	*All*.....	Creating a commission to represent the state at a congress of representatives of several states to consider the relations of state and federal governments in respect to taxation, and making an appriation ($2,000).						
		All......		1918	343[1]				
1917	134	*All*.....	City of Buffalo, taxation, amending charter, L. 1914, ch. 217, § 116a (added).						
1917	135	*All*.....	Village of Ossining, payment of local assessments, amending L. 1910, ch. 667, § 126.						
1917	138	*All*.....	Use and protection of funds of the University of Buffalo, amending L. 1846, ch. 193, § 10.						
1917	139	*All*.....	Board of supervisors of Jefferson county authorized to sell certain land to the city of Watertown.						
1917	141	*All*.....	Trustees of the village of Ossining authorized to make reapportionment and reassessment of portion of the expense of sewer system.						
1917	142	*All*.....	Creating a commission to investigate the methods of purchasing materials and supplies for state departments, boards, commissions, offices and institutions.						
1917	143	*All*.....	Appropriation ($3,700) for joint legislative committee on taxation.						
1917	144	*All*.....	Appropriation ($7,575.78) for compensating Cornelius V. Collins for expenses and disbursements in successfully defending charges brought against him for his conduct as superintendent of state prisons.						
1917	145	*All*.....	Powers, duties and privileges of subscribers to the permanent fund of Alfred University, amending L. 1857, ch. 190, §§ 1, 3.						

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[1] Reappropriated.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	146	*All*	Appropriation ($2,500,000) to acquire lands for state park purposes within the forest preserve counties.[1]						
		3		1918	10				
1917	147	*All*	Appropriation ($2,500,000) for the purpose of acquiring lands for the extension of the Palisades Interstate Park.[2]						
1917	148	*All*	Replacing election records destroyed by fire in the county of Herkimer, and providing for new enrollments of party voters in such county.						
1917	152	*All*	City of Syracuse, annual appropriation for retired teachers' pension fund, amending charter, L. 1885, ch. 26, §§ 183a, subd. 2; 183a, subd. 3a (added); 183a, subd. 9.						
1917	157	*All*	Greater New York charter, deposit to accompany bids on proposals to furnish supplies or work, amending L. 1901, ch. 466, § 420.						
1917	160	*All*	Schools and academies of village of Ogdensburg, rate of taxation, amending L. 1857, ch. 382,[3] § 17.						
1917	162	*All*	Board of supervisors of Rensselaer county authorized to allow claims of certain county employees.						
1917	163	*All*	City of Syracuse, power of commissioner of public works to lease real property, amending L. 1905, ch. 684, § 1.						
1917	164	*All*	City of Elmira, salary of clerk of recorder's court, amending charter, L. 1906, ch. 477, § 141.						
1917	165	*All*	City of Syracuse, amount of bonds issued for cost of erection of vocational high school, amending L. 1914, ch. 299, § 4.						
1917	166	*All*	City of Yonkers, revenue bonds and certificates of indebtedness, amending charter, L. 1908, ch. 452, art. 4, § 1.						
1917	167	*All*	Creating department of purchasing supplies for the county of Erie and prescribing powers and duties of purchasing agent.						

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[1] See L. 1916, ch. 569.

[2] See L. 1916, ch. 569.

[3] L. 1857, ch. 382 all repealed by L. 1917, ch. 786.

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly by	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch
1917	168	*All*.....	Palisades Interstate Park, jurisdiction of commissioners, amending L. 1900, ch. 170, § 5.					
1917	169	*All*.....	City of Albany, payment of contractors for city work, amending L. 1912, ch. 358, § 2.					
1917	175	*All*.....	Lands of the state ceded to the village of Port Chester for highway purposes.					
1917	178	*All*.....	Bonds of the village of Waterloo, Seneca county, issued for the payment of cost of paving streets, legalized.					
1917	180	*All*.....	Interest of the state in certain lands granted to the village of Malone, in county of Franklin, for municipal park.					
1917	181	*All*.....	Appropriations for support of government.					
1917	183	*All*.....	City of Glens Falls, amending charter generally, L. 1908, ch. 29.					
1917	185	*All*.....	Establishing a firemen's relief and pension fund for the fire department of the city of Rome.					
1917	186	*All*.....	Saint Mary's Cemetery of Rome empowered to convey certain properties to Saint Mary's Roman Catholic Church of Rome.					
1917	189	*All*.....	Town of Ossining authorized to appropriate certain moneys to the Ossining Hospital Association.					
1917	190	*All*..... 1–5.....	Providing for the improvement of streets in sidewalk districts in town of Brighton, in county of Monroe.	 1918	 408			
1917	191	*All*.....	Compensation of the members of the board of supervisors in Oneida county, amending L. 1908, ch. 418, § 2.					
1917	195	*All*.....	Bond issue by the city of Corning for the purpose of controlling the waters of Monkey Run creek within the limits of the city.					
1917	198	*All*.....	Village of Peekskill, issuing permits and licenses, amending charter, L. 1883, ch. 117, tit. 5, § 3, subd. 27.					

The italicized matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1917	203	*All*.....	Appropriation ($4,000) for the court of appeals law library at Albany.						
1917	205	*All*.....	Commission created for the purpose of assuring an adequate food supply in the state and to promote the production of such supply, and making an appropriation ($50,000) therefor.[1]						
		3.......		1917	506	1			
		All......		1917	813[1]				
1917	206	*All*.....	Greater New York charter, number of bureaus in the department of finance, amending L. 1901, ch. 466, § 151, first sentence.						
1917	208	*All*.....	Extension of the Solvay-state fair-Syracuse county highway, amending L. 1916, ch. 250, § 1.						
1917	217	*All*.....	Appropriations for the military training commissions.						
1917	218	*All*.....	Leasing portion of the hall of records in the county of New York to the state of New York, amending L. 1907, ch. 712, § 1.						
1917	219	*All*.....	Inferior criminal courts act of the city of New York, commitment of vagrants or disorderly persons in borough of Richmond, amending L. 1910, ch. 659, § 88, subd. 3.						
1917	220	*All*.....	Greater New York charter, transfer of balances of unexpended appropriations, amending L. 1901, ch. 466, §§ 237, 248.						
1917	221	*All*.....	Greater New York charter, appropriations for observance of Memorial Day, amending L. 1901, ch. 466, § 245.						
1917	223	*All*.....	Appropriations for the contributions of the state for the repair and improvement of town highways, and repair and improvement of highways and bridges on Indian reservation.						
1917	236	*All*.....	Establishing a state normal and training school in the county of Westchester.						

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[1] Commission abolished and state food commission created.

The italicised matter following each chapter number indicates the part of such chapter treated as speci private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1917	237	*All*.....	Superintendent of public works authorized to provide towing facilities on the Erie canal and on a portion of the Oswego canal, and making an appropriation ($150.000) therefor.						
		All......		1918	343[1]				
1917	238	*All*.....	Creating the hospital development commission, authorizing new buildings for Utica State Hospital and the Middletown State Hospital, and making appropriations for such purposes.						
		2, subds. 10, 11 (added)		1918	150				
		All......		1918	343[1]				
1917	239	*All*.....	Fairlawn Cemetery Society of the town of Mount Pleasant, Westchester county, authorized to transfer lands to the trustees of Saint Patrick's cathedral in the city of New York.						
1917	240	*All*.....	Appropriation ($1,825.00) for compensating Franklin B. Ware, former state architect, for expenses incurred by him in defending charges brought against him.						
1917	246	*All*.....	Enlargement of the powers of the corporation under the name of Carnegie Corporation of New York.[2]						
1917	247	*All*.....	County of Westchester authorized to purchase Washington headquarters property within said county.						
1917	249	*All*.....	Legalizing bonds issued by the village of Canton, Saint Lawrence county, for additional system of waterworks.						
1917	250	*All*.....	Powers of the municipal commission of the village of Herkimer relative to electrical current and water supply, amending L. 1910, ch. 162, §§ 7, 8, 9, 11, 12, 13.						
1917	251	*All*.....	Condemnation proceedings by commissioners of the Palisades Interstate Park, amending L. 1900, ch. 170, §§ 6, 7, 11, 13, 17.						
1917	252	*All*.....	City of Ogdensburg, sprinkling streets, amending charter, L. 1893, ch. 87, § 89h; § 89i (added).						

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[1] Reappropriated.

[2] Incorporated, L. 1911, ch. 297.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	254	*All*	Money to be raised for school purposes in the city of Utica, amending L. 1850, ch. 66, § 1.						
1917	256	*All*	Incorporating Catholic Charities Aid Association.						
1917	257	*All*	Greater New York charter, leaves of absence of members of police force, amending L. 1901, ch. 466, § 292.						
1917	258	*All*	Greater New York charter, annual city budget, amending L. 1901, ch. 466, § 226.						
1917	259	*All*	Greater New York charter, appeal to appellate division in condemnation proceedings, amending L. 1901, ch. 466, §§ 9951, 441.						
1917	260	*All*	City of Binghamton, tax to raise moneys for the firemen's pension fund, amending L. 1912, ch. 403, § 2, subd. 8a (added)						
1917	262	*All*	City of Buffalo, use of public school buildings for public discussions, amending L. 1914, ch. 217, § 291a (added).						
1917	268	*All*	Appropriation ($900) for maintenance of the supreme court library at Troy.						
1917	269	*All* All	Incorporating the federation for the support of Jewish philanthropic societies of New York city.	1917	498[1]				
1917	271	*All*	Office of sheriff of Herkimer county, deputies and under sheriffs and court officers, amending L. 1903, ch. 319, §§ 3, 4.						
1917	272	*All*	Village of East Rochester, legalizing proceedings and bond issue for extending water mains in certain street.						
1917	273	*All*	Village of East Rochester, legalizing proceedings and the issue of bonds for paving and surface water sewer.						
1917	274	*All*	Village of East Rochester, legalizing proceedings and bond issue for constructing storm water sewer.						
1917	275	*All*	Village of Albion, boundaries and the grading, paving, curbing and draining of streets, amending charter, L. 1879, ch. 142, tit. 1, § 1, tit. 9, §§ 2, 4.						

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[1] Affiliation of other corporations.

The italicised matter following each chapter number indicates the part of such chapter treated as special private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1917	276	*All*.....	Appropriation ($300,000) for the state's share of the cost of construction and improvement of the rural post roads within the state as provided under the provisions of an act of congress.						
1917	277	*All*.....	Reappropriating unexpended balances for the purpose of construction and improvement of portions of state routes within several counties of the state.						
1917	278	*All*.....	Superintendents of the Eel Weir Park of the town of Oswegatchie, amount of disbursements or indebtedness, amending L. 1911, ch. 236, §§ 2, 5.						
1917	282	*All*.....	Appropriation ($20,800) for payment of the expenses of the joint legislative committee appointed to investigate and determine what legislation should be enacted to afford relief to the city of New York.						
		All......		1918	343[1]				
1917	284	*All*.....	Separate tax district directed in the town of Schroon, in the county of Essex, for the construction of a highway therein.						
1917	285	*All*.....	Proceedings of the town of North Hempstead, Nassau county, in the formation of water district and the issue and sale of bonds legalized.						
1917	288	*All*.....	Providing for the expenditure of the unexpended balance of appropriation made for the payment of nonresident academic tuition.[2]						
1917	291	*All*.....	Legalizing the proceedings of the village of East Rochester in the matter of paving and construction of surface water sewer and the issue of bonds.						
1917	295	*All*.....	Appropriation for the New York state drill hall, Cornell University.						
1917	296	*All*.....	Appropriation for the payment of assessment levied against the state by city of Lockport for improvement of Market street, adjoining Erie canal.						

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[1] Reappropriated.

[2] Appropriation, L. 1915, 725.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	297	*All*	Assessment rolls for the townships and tax districts therein in the county of Nassau, amending L. 1916, ch. 541, §§ 1, 4, 6, 15, 18, 25, 26, 27a (added), 28, 29, 30, 31, 33, 49, 62, 71.						
1917	302	*All*	State commission for improving the condition of the blind authorized to receive moneys by gift or bequest, amending L. 1913, ch. 415, § 9a (added).						
1917	303	*All*	Greater New York charter, teachers' retirement fund, amending L. 1901, ch. 466, § 1092; repealing §§ 1092a, 1092b, 1092c.						
1917	306	*All*	Appropriation ($8,500) for an investigation of bean production in New York state.						
1917	309	*All*	Police pension fund for the village of Peekskill established.						
1917	310	*All*	City of Amsterdam, claims for injuries to person and property and methods of paving, amending charter L. 1911, ch. 242, §§ 48, 57.						
1917	311	*All*	Salary of supervisors in Westchester county, amending L. 1902, ch. 342, § 2.						
1917	313	*All*	Confirming the appointment of members of a commission to represent and protect the interests of the state of New York in freight rate proceedings brought by a committee appointed by the governor of New Jersey, and making an appropriation ($10,000) for expenses of commission.						
1917	314	*All*	The Chamberlain Institute agreement made with union free school district, number 1, of the town of Randolph continued in force and repealing section 7 of chapter 517 of the laws of 1866.						
1917	316	*All*	Appropriation ($5,000) and authorizing the repair and preservation of the Guy Park house building and grounds in the city of Amsterdam, and transferring the custody thereof to the American Chapter of the Daughters of the American Revolution.						

The italicised matter following each chapter number indicates the part of such chapter treated as speci private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	317	*All*.....	Board created for the purpose of conferring with federal authorities relating to plans for the proposed canal to be constructed by federal government on Long Island, and making appropriation ($15,000) for expenses of board.						
		1.......		1918	122				
		All......		1918	343[1]				
1917	322	*All*.....	Appropriation ($4,427.59) for payment to union free school, district number one, of the town of Ossining, Westchester county, for taxes levied upon real property belonging to the state.						
1917	325	*All*.....	Providing for the preparation of a supplement to the statutory record of unconsolidated laws and making an appropriation therefor.						
		1.......		1918	424				
1917	326	*All*.....	Acceptance by the state of New York as a free gift from Historical Society of Newburgh Bay and the Highlands, a parcel of land in the town of New Windsor, Orange county, where stands the Temple Hill monument, and making appropriation ($500) for fencing land.						
1917	328	*2*.......	Act creating town boards of						
		2.......	education..................	....	...	....	1918	199	
1917	329	*All*.....	Auburn Theological Seminary, filling vacancies in the board of directors, amending L. 1906, ch. 56, § 2.						
1917	330	*All*.....	Rate of taxation for school purposes in the village of Ogdensburg, amending L. 1857, ch. 382, § 17.[2]						
1917	331	*All*.....	Appropriation ($15,000) for the expenses of the joint committee of the legislature appointed to investigate and inquire into the report of the statutory consolidation on the simplification of the civil practice in the courts of the state.						
1917	332	*All*.....	Preparation of indexes of the statutes and making an appropriation therefor.						

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[1] Reappropriated.

[2] L. 1857, ch. 382 repealed by L. 1917, ch. 786.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	333	*All*	City of Tonawanda, amending charter generally, L. 1905, ch. 357.						
1917	334	*All*	Appropriation ($10,000) for the partial payment of the salary to which Egbert E. Woodbury would have been entitled had he continued in office as attorney-general.						
1917	336	*All*	City of Corning, office of chamberlain and member of police force, amending L, 1905, ch. 142, §§ 39, 48, § 49 (repealed), § 77.						
1917	337	*All*	City court of Buffalo, appointment of temporary judges amending L. 1909, ch. 570, § 9a (added).						
1917	338	*All*	Salary of officers in the sheriff's office of the county of Suffolk, amending L. 1902, ch. 131, § 9.						
1917	341	*All*	Taking and holding property by the American Missionary Association, amending L. 1862, ch. 358, § 4.						
1917	346	*All*	Village of Green Island, Albany county, term of office of electric light commissioners, amending L. 1901, ch. 623, § 1.						
1917	347	*All*	Compensation of judges' clerks in the court of general sessions of the county of New York, amending L. 1911, ch. 288, § 1.						
1917	354	*All*	Establishing a board of child welfare for the county of Dutchess.						
1917	363	*All*	Amount of capital stock of the New York Building and Improvement Company, amending L. 1881, ch. 598, § 2.						
1917	369	*All* All	Appropriation ($1,000,000) and the establishment of a state council of defense and defining the powers and duties of such council.	1918	343[1]				
1917	371	*All*	City of Sherill, amending charter generally, L. 1916, ch. 172, §§ 25, 94a (added), 98a–98h (added), 118, 125, 150, 171, 207, repealing §§ 109, 111.						

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[1] Reappropriated.

The italicised matter following each chapter number indicates the part of such chapter treated as speci private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	372	*All*	Authorizing the city of Mechanicville to pay certain town audits to the town of Half Moon.						
1917	373	*All*	City of Geneva, amending charter generally, L. 1897, ch. 360, §§ 30, 56, 68, 144, 145; § 147 (repealed), § 147 (added), § 148a (added).						
1917	375	*All*	State executive committee of the Young Men's Christian Association of the state of New York, management, amending L. 1886, ch. 137, § 2.						
1917	376	*All*	Making a survey for an extension of barge canal from Auburn to Port Byron, and making an appropriation ($10,000) therefor.						
1917	378	*All*	City of Schenectady, composition and distribution of police pension fund, amending L. 1907, ch. 183, §§ 1, 2, subds. 5, 7, 3, subds. 1–3.						
1917	379	*All*	City of Auburn authorized to issue bonds to provide means for filtering water furnished for public use.						
1917	380	*All*	Greater New York charter, amount allowed to police commissioner for contingent expenses, amending L. 1901, ch. 466, § 297.						
1917	381	*All*	City of White Plains, amending charter generally, L. 1915, ch. 356.						
1917	382	*All*	Greater New York charter, judicial notice of ordinances, amending L. 1901, ch. 466, § 1556.						
1917	383	*All*	Construction of sewers in and otherwise improving Remsen avenue in the borough of Brooklyn, in the city of New York.[1]						
1917	384	*All* 1	Providing for the use for military purposes of the state lands at Beekman acquired for Industrial Farm Colony.	1918	273				

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[1] Laying out Remsen avenue, L. 1916, ch. 495.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	388	*All*.....	Appropriation ($100,000) for the payment by the state in the first instance of the federal government's share of the cost and improvement of rural post roads within the state as provided under provisions of an act of congress.						
1917	389	*All*.....	Appropriation ($1,500) for the widow of George E. Spring, late senator from the fifty-first district, for the amount of his salary during the legislative session.						
1917	390	*All*.....	Cost of maintenance of prisoners employed in construction work in establishment of new farm and industrial prison at Sing Sing, amending L. 1916, ch. 594, § 4.						
1917	392	*All*.....	City of Lockport, park and shade tree commission, amending charter, L. 1911, ch. 870, § 63a (added).						
1917	393	*All*.....	City of Lockport empowered to sell surplus waters to be used at Niagara county tuberculosis hospital.						
1917	394	*All*.....	Planning commission of the city of Elmira must approve maps of certain lands before filing.						
1917	395	*All*.....	Greater New York charter, promotions in the police force, amending L, 1901, ch. 466, § 288.						
1917	396	*All*.....	Greater New York charter, payment of cost of public improvements, amending L. 1901, ch. 466, § 247.						
1917	397	*All*.....	Establishing a park department in the city of Syracuse.						
1917	398	*All*.....	Jurisdiction and funds of the park commission of city of Syracuse, amending L. 1906, ch. 586. § 5, repealing §§ 6, 7, § 8 renumbered 6, §§ 9, 10, renumbered 7, 8.						
1917	399	*All*.....	Inferior criminal courts act of New York city, display of American flag in court rooms, amending L. 1910, ch. 659, §§ 115, 116 (added).						
1917	400	*All*.....	Greater New York charter, duties of property clerk in police department, amending L. 1901, ch. 466, § 331.						

The italicised matter following each chapter number indicates the part of such chapter treated private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly b	
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch
1917	401	*All*.....	Greater New York charter, contracts for purchase of eggs, milk, butter or canned fruits and vegetables, amending L. 1901, ch. 466, § 149					
1917	402	*All*.....	Legalizing the issuance and sale of bonds of the city of Lockport for equipment and furnishing of the union school building.					
1917	403	*All*.....	Westchester county authorized to issue bonds to pay indebtedness arising from construction of sewers in the Bronx valley sanitary sewer district.					
1917	404	*All*.....	Greater New York charter, appointment of new member of board of health, amending L. 1901, ch. 466, § 1167.					
1917	406	*All*.....	Commission created to prepare preliminary plan and report for a trunk sewer through the Saw Mill river and Harlem valleys in the county of Westchester.					
1917	407	*All*.....	Town of Bedford, Westchester county, authorized to create a sewer district and construct a sewer, and authorizing the town of Bedford and the village of Mount Kisco and the city of New York to provide for the disposal of the sewerage of such district.					
1917	408	*All*.....	Establishing a sidewalk district in the town of Cornwall, in the county of Orange.					
1917	409	*All*.....	Census and inventory of the military resources of the state, supplementing L. 1917, ch. 103.					
1917	411	*All*.....	Providing for the registration and supervision of laboratories where live pathogenic germs are handled, and to prevent the use of bacteria for criminal purposes.					
1917	415	*All*.....	Board of supervisors of Westchester county directed to publish quarterly statement of all moneys disbursed by county treasurer or other county officer.					

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	417	*All*.....	Sale of the real property of the Auburn Orphan Asylum authorized and confirmed.						
1917	420	*All*.....	Kings county, certain territory annexed from Queens county, amending L. 1915, ch. 410, § 1.						
1917	421	*All*.....	City of Norwich, amending charter generally, L. 1914, ch. 34.						
1917	422	*All*.....	City of Lackawanna, amending charter generally, L. 1909, ch. 574, §§ 33, 36, 38, 62, subd. 9, 83, 162, 282.						
1917	424	*All*.....	City of Rome, amending charter generally, L. 1904, ch. 650, §§ 8, 48, 49, 93a (added), 114, 141, subd. 2, 149, 175.						
1917	425	*All*.....	City of Ithaca, amending charter, L. 1908, ch. 503, § 35, subd. 35, §§ 128, 150.						
1917	426	*All*.....	Creating a commission to act jointly with similar commission of the state of New Jersey in the investigation of port conditions at the port of New York and making an appropriation for expenses of commission.						
		All.....		1918	201[1]				
		All.....		1918	343[2]				
1917	427	*All*.....	City of Mount Vernon, equalization of assessment rolls and payment of taxes, amending charter, L. 1892, ch. 182, §§ 133, 135, 136.						
1917	428	*All*.....	City of Buffalo, appropriations for day nurseries, amending charter L. 1914, ch. 217, § 103a (added).						
1917	429	*All*.....	City of Syracuse, ward boundaries, amending charter, L. 1885, ch. 26, §§ 3, 4, subds. 1–4, 10, 13, 17.						
1917	432	*All*.....	Exempt Volunteer Firemen's Association, Incorporated, of city of Batavia, authorized to collect tax on foreign fire insurance companies, or their agents.						
1917	434	*All*.....	Appropriation ($40,000) for an addition to the armory at Malone, Franklin county.						

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[1] Appropriation

[2] Reappropriation.

The italicised matter following each chapter number indicates the part of such chapter treated as speci private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	436	*All*.....	Legalizing official acts of notaries public and commissioners of deeds.						
1917	437	*All*.....	Commissioners of the land office authorized to cede and convey to the United States certain lands in the city of Syracuse.						
1917	438	*All*.....	Board of management and amount of property to the Silver Bay Association for Christian Conferences and Training, amending L. 1904, ch. 102, §§ 2, 4.						
1917	439	*All*.....	Issue of bonds of the village of Fairport, Monroe county, for paving and for surface water sewer legalized.						
1917	441	*All*.....	City of Auburn, compensation of jurors in city court and recorder's court, amending charter, L. 1906, ch. 185, § 51a (added)						
1917	442	*All*.....	City of Niagara Falls, amending charter generally, L. 1916, ch. 530.						
1917	443	*All*.....	Memorial Baptist Church of Albany authorized to continue its corporate existence.						
1917	444	*All*.....	City of Watervliet, salaries of city officers and temporary and funded debts of the city, amending charter, L. 1911, ch. 184, §§ 17, 80.						
		All......		....	...	....	1918	462	2
1917	445	*All*.....	Establishment and maintenance of a tuberculosis dispensary and open air school in connection with municipal tuberculosis hospital in city of Yonkers, amending L. 1910, ch. 586, §§ 3, 4, 5.						
1917	446	*All*.....	City of Elmira, police pension fund, amending L. 1900, ch. 525, § 1, 3, subd. 4 (added).						
1917	447	*All*.....	City of Dunkirk, bond of receiver of taxes, amending charter L. 1909, ch. 538, § 102.						
1917	448	*All*.....	Apportionment and assessment of the cost and expenses of the improvement of Madison place in the city of Albany.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	449	*All*	Qualifications of school commissioners and of electors at school elections in the city of Ogdensburg, amending L. 1893, ch. 454, §§ 1, 3.[1]						
1917	450	*All*	City of Ogdensburg, clearing sidewalks of snow and ice, amending charter, L. 1893, ch. 87, § 94a (added).						
1917	451	*All*	County of Albany empowered to sell to city of Albany certain land for boulevard connection between Washington park and Lincoln park.						
1917	452	*All*	Issue of bonds and providing for the payment of the cost of paving portions of West Sullivan street in city of Olean.						
1917	453	*All*	Appropriation ($1,650) for the purpose of making survey and plans for improvement of Tonawanda creek in and about the city of Batavia.						
1917	454	*All*	City of Oneonta, amending charter generally, L. 1908, ch. 454, §§ 34, 37, 78, subd. 8, 190, 193, 194, 196.						
1917	455	*All*	Compensation of police officers in the town of Whitehall, Washington county, amending L. 1895, ch. 25, § 16.						
1917	456	*All*	Membership and shares of stock in the College of Pharmacy of the city of New York, amending L. 1884, ch. 424, § 1.						
1917	457	*All*	Establishment of a ferry from and to Cumberland Head in town of Plattsburg, county of Clinton.						
1917	460	*All*	Release of state's interest in certain lands at Sing Sing, Westchester county to village of Sing Sing for park and street purposes, amending L. 1882, ch. 128, § 1.						
1917	461	*All*	Meeting and election of trustees of the Auburn Orphan Asylum legalized.						
1917	463	*All*	City of Buffalo, publishing names of plumbers, amending charter, L. 1914, ch. 217, § 286.						

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[1] L. 1893, ch. 454, repealed by L. 1917, ch. 786.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	464	*All*.....	Dissolving the corporation known as "the Trustees of the Peabody Education Fund" and repealing L. 1867, ch. 329, L. 1867, ch. 498.						
1917	465	*All*.....	Appropriation to pay to Helen C. Maddox, widow of the late Samuel T. Maddox, justice of the supreme court of the second judicial department, balance due for his annual compensation.						
1917	466	*All*.....	Legalizing certain indebtedness of the village of Waverly and providing for payment by taxation.						
1917	470	*All*.....	City of White Plains, preparation and adoption of school budget, amending charter, L. 1915, ch. 356, § 268a (added); repealing § 267.						
1917	473	*All*.....	Sheriff of Richmond county may employ certain officers and employees, amending L. 1896, ch. 392, § 1.						
1917	475	*All*.....	City of Buffalo, police department, amending charter L. 1914, ch. 217, § 251.						
1917	476	*All*.....	City of Buffalo, taxation amending L. 1914, ch. 217, §§ 169, 170, 172, 175.						
1917	477	*All*.....	City court of Buffalo, clerks and employees, summons and parties, fees, jurisdiction, amending L. 1909, ch. 570, §§ 10, 23, 23a, (added), 24, 26, 34, 35, 49, 72.						
1917	478	*All*.....	City of Oswego, ambulance driver, amending charter, L. 1895, ch. 394, § 190.						
1917	479	*All*.....	City of Rochester, Fifth and Seventeenth ward boundaries, amending charter, L. 1907, ch. 755, § 3, subds. 5, 17.						
1917	495	*All*.....	Incorporating the general board of education of the Presbyterian Church in the United States of America.						
1917	497	*All*.....	Comission created to ascertain the difference between the compensation paid by the United States to members of national guard who performed services outside of the state and the compensation which would have been paid by the state had the services been performed within the state.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	498	*All*.....	Any corporation formed for benefit of the Jews of New York city for charitable, benevolent or educational purposes, may affiliate with the Federation for the Support of Jewish Philanthropic Societies of New York City.[1]						
1917	504	*All*.....	City of Buffalo, taxation, amending charter, L. 1914, ch. 217, §§ 106, 117.						
1917	505	*All*.....	City of Rochester, amending charter generally, L. 1907, ch. 755.						
1917	506	*All*..... All......	Providing for an adequate food supply and for promoting the production of such supply, amending L. 1917, ch. 205, § 3.	 1918	 343[2]				
1917	508	*All*.....	City of Binghamton authorized to pay claim of the City Coal Company.						
1917	515	*All*.....	Removal of steam railroad grade crossings in city of Syracuse, amending generally, L. 1912, ch. 533.						
1917	519	*All*.....	Superintendent of public works authorized to replace existing motor vehicle equipment on the canals.						
1917	520	*All*.....	Appropriation ($5,000) for entertainment and reception of guests of United States now accredited from France and other countries.						
1917	521	*All*.....	Excise commissioner, with approval of governor, may, during present war, suspend privileges under liquor tax certificates.						
1917	522	*All*.....	Temporary loan for the payment of debts by the town of Long Lake, Hamilton county, authorized.						
1917	533	*All*.....	Town of Clifton, Saint Lawrence county, authorized to place on assessment roll state lands therein.						
1917	539	*All*.....	Time extended to finish construction of the Frontier Electric Railway Company's railroad, supplementing L. 1914, ch. 411.						

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[1] See L. 1917, ch. 269.

[2] Reappropriated.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	548	*All*.....	Establishing a police pension fund for the city of Cohoes.						
1917	549	*All*.....	Creating the office of county attorney for the county of Westchester.						
1917	554	*All*.....	Incorporating the Federation of Councils of the Boy Scouts of America in the City of New York.						
1917	555	*All*.....	Repealing L. 1911, ch. 779, establishing state athletic commission.						
1917	561	*All*.....	Police pension fund of the city of Albany, amending L. 1899, ch. 554, §§ 2, 4.						
1917	566	*All*.....	Form of incorporation of the Physicians' Hospital at Plattsburg changed from a stock corporation to a membership corporation.						
1917	569	*All*.....	Appropriations for the personal expenses and counsel fees in connection with contests of seats in the assembly.						
1917	571	*All*.....	City of Buffalo, children's court, amending L. 1891, ch. 105, § 516, § 517a (added), § 531a.						
1917	575	*All*.....	Appropriation ($18,000) for the acquisition of the Wemple property adjoining the grounds of the New York State Hospital for the Care of Crippled and Deformed Children.						
1917	576	*All*.....	Acceptance by the state of New York of the benefits of an act passed by congress of the United States providing for promotion of vocational education.						
1917	581	*All*.....	Defining title and interest to be acquired by the state of the land to be exchanged with Western New York and Pennsylvania Railway Company, amending L. 1899, ch. 592, § 1a (added).						
1917	584	*All*.....	City of Batavia, amending charter generally, L. 1914, ch. 354.						
1917	590	*All*.....	Charter city of Newburgh. [Previous charter, L. 1916, ch. 575.]						
1917	599	*All*.....	City of Oswego, assessment of damages for change of grade, amending charter, L. 1895, ch. 394, § 255.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1917	600	*All*.....	Governor authorized to prohibit fishing, boating or ice taking on waters of New York city water supply, when emergency exists in interest of public safety.						
1917	601	*All*.....	Greater New York charter, enforcement of building district regulations, amending L. 1901, ch. 466, §§ 242a, 242b, 718d.						
1917	602	*All*.....	Greater New York charter, law department, amending L. 1901, ch. 466, §§ 255–258, 259, repealing §§ 258a, 260.						
1917	603	*All*.....	Inferior criminal courts act of city of New York, punishment for public intoxication and disorderly conduct, amending L. 1910, ch. 659, § 88, subd. 4.						
1917	604	*All*.....	Greater New York charter, bureau of fire investigation and designation of chief and deputy chief, amending L. 1901, ch. 466, §§ 779, 781.						
1917	605	*All*.....	Certain lands under water in Flushing bay and Flushing creek and vicinity granted to New York city, amending L. 1913, ch. 62, § 5 (renumbered 3), § 3 (renumbered 4), § 4 renumbered 5).						
1917	606	*All*.....	Objects and powers of the honor roll relief fund, amending L. 1915, ch. 301, § 1.						
1917	607	*All*.....	Term of office of sheriff of the city and county of New York, amending L. 1890, ch. 523, § 1.						
1917	608	*All*.....	Board of assessors of the city of New York authorized to make awards for damage caused by change of grade of Sixty-seventh street, Brooklyn.						
1917	609	*All*.....	Greater New York charter, changing numbers of certain sections of L. 1901, ch. 466.						
1917	610	*Al*.....	Greater New York charter, fees of applicants for commissioners of deeds, amending L. 1901, ch. 466, § 58.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1917	611	*All*.....	Municipal court act of the city of New York, dismissal for neglect to prosecute, amending L. 1915, ch. 279, § 126.						
1917	612	*All*.....	Rapid transit act, limiting time to appeal from final decree in condemnation proceedings, amending L. 1891, ch. 4, § 55.						
1917	613	*All*.....	Commissioners of sinking fund of New York city authorized to convey certain real estate to board of education of union free school district number fifteen of town of Hempstead, county of Nassau.						
1917	614	*All*.....	Greater New York charter, compensation of master and journeyman plumber members of the examining board of plumbers, amending L. 1901, ch. 466, § 1572.						
1917	615	*All*.....	Greater New York charter, expenses of removing snow and ice from streets, amending L. 1901, ch. 466, § 546.						
1917	616	*All*.....	Commissioners of sinking fund of city of New York authorized to cancel and annul all taxes, water rents and assessments against property of the Convent of Jesus-Mary, Incorporated.						
1917	617	*All*.....	Greater New York charter, deposit of public moneys, amending L. 1901, ch. 466, § 196.						
1917	618	*All*.....	Greater New York charter, licensing of pawnbrokers, amending L. 1901, ch. 466, § 641.						
1917	619	*All*.....	Greater New York charter, disorderly persons, amending L. 1901, ch. 466, § 690.						
1917	620	*All*.....	Greater New York charter, licenses and permits to have or possess pistols or revolvers, amending L. 1901, ch. 466, § 353, subd. 7.						
1917	621	*All*.....	Greater New York charter, position of city superintendent of schools emeritus, created, amending L. 1901, ch. 466, § 1079a (added).						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	622	*All*.....	Sutter avenue in borough of Queens, in city of New York, extended through lands of Acacia cemetery.						
1917	625	*All*.....	Rapid transit act, contracts in emergencies or for limited amounts, amending L. 1891, ch. 4, § 26, subd. 2, § 36, § 37, subd. 2.						
1917	626	*All*.....	Appropriation ($12,500) for concrete culvert over Eighteen-mile creek in city of Lockport.						
1917	627	*All*.....	Greater New York charter, teaching staff salaries of board of education, amending L. 1901, ch. 466, § 1091.						
1917	628	*All*.....	Greater New York charter, jurisdiction of the commissioner of corrections, amending L. 1901, ch. 466, § 696						
1917	630	*All*.....	Legal expenses of the sheriff of county of Bronx authorized by board of estimate and apportionment of New York city.						
1917	631	*All*.....	Greater New York charter, acquire title to real property, for court yards abutting streets, amending L. 1901, ch. 466, §§ 970, 976.						
1917	632	*All*.....	Greater New York charter, map of bulkhead and pier-head lines, and courtyards abutting streets, amending L. 1901, ch. 466, §§ 439, 442.						
1917	633	*All*.....	City of New York authorized to pay balance of compensation payable to Samuel T. Maddox, late justice of the supreme court in second judicial department, to his widow, Helen C. Maddox.						
1917	636	*All*.....	Reenacting § 2 of L. 1913, ch. 452, providing for the repayment of moneys paid to state by Long Sault Development Company and making an appropriation therefor.[1]						
1917	637	*All*.....	City of Dunkirk, amending charter, L. 1909, ch. 538, §§ 15, 17, 154, 160, §§ 174, 175 (added).						

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[1] Long Sault Development Company charter repealed L. 1913, ch. 452.

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Statutes				Amended or otherwise affected by			Expressly repeale by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1917	639	*All*.....	Reinstatement of Arthur E. Wenigl, late captain in fourteenth infantry, New York state national guard.						
1917	640	*All*.....	Legalizing proceedings of the village of Attica, in the county of Wyoming, for the purchase of existing system of water works and authorizing issue of bonds.						
1917	641	*All*.....	City of Plattsburg, amending charter generally, L. 1902, ch. 269.						
1917	642	*All*.....	Canal board authorized to convey to the city of New York rights and easements in barge canal terminal lands for construction and operation of rapid transit railroads.						
1917	643	*All*.....	Widening of Pelham avenue and bridge over tracks of New York and Harlem railroad in New York city, amending L. 1905, ch. 731, §§ 4, 5.						
1917	645	*All*.....	City of Schenectady, application of surplus water rents, amending charter, L. 1907, ch. 756, § 31.						
1917	646	*All*.....	Construction and maintenance of sanitary trunk sewer and sanitary outlet sewer in county of Westchester, supplementing L. 1905, ch. 646.....						
		1.......		1918	535				
		7, 11, 12		1918	82				
		14, 15 (added)		1918	82				
		14 (renumbered 16)....................		1918	82				
1917	650	*All*.....	Village of Port Chester authorized to issue bonds for purpose of purchasing fire apparatus.						
1917	651	*All*.....	Police commissioner of the city of New York authorized to appoint citizens to perform duty in police department during continuance of war.						
1917	656	*All*.....	John W. Mullins, a veteran of the late civil war, deemed to have been retired from his employment by the state and entitled to a pension.						
1917	658	*All*.....	City of Jamestown, curbstones, gutters and culverts and sanitary sewer system, amending charter L. 1907, ch. 387, § 188.						
1917	659	*All*.....	City of Jamestown, annual, tax levy, amending charter, L. 1907, ch. 387, § 64.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	661	*All*.....	Proceedings for the incorporation of the village of Holcomb, Ontario county, legalized.						
1917	663	*All*.....	City of Jamestown, care of disabled policemen and firemen, amending charter, L. 1907, ch. 387, § 56a (added).						
1917	664	*All*.....	Annexation of part of city of Yonkers to city of New York.						
1917	665	*All*.....	Bronx park in city of New York set apart for the use of New York Zoological Society, amending L. 1895, ch. 435, § 7a (added).						
1917	666	*All*.....	Price of gas in the borough of Brooklyn and in the borough of Richmond, New York city, amending L. 1906, ch. 125, § 1, subds. 1, 2.						
1917	668	*All*..... All......	Supplemental charter of the city of Binghamton. [Previous charter L. 1907, ch. 751.]	 1918	 133[1]				
1917	676	*All*.....	Bond issue for the purpose of providing funds to pay for new high school building in city of Batavia legalized.						
1917	680	*All*.....	City of Rensselaer, elective city officers and compensation, salaries, amending L. 1915, ch. 69, §§ 12, 202, 234, 235.						
1917	688	*All*.....	Legalizing proceedings and issue of bonds for new school site and buildings in school district number six in city of Lackawana, Erie county.						
1917	689	*All*.....	Employment of children in agricultural pursuits and suspension of compulsory education law.						
1917	691	*All*.....	Greater New York charter, legalizing certain contracts, amending L. 1901, ch. 466, § 1541a (added).						
1917	692	*All*.....	Greater New York charter, menaces to life or safety of persons or property on Central Park West, eliminated, amending L. 1901, ch. 466, § 242c (added).						
1917	695	*All*.....	Money paid into the city treasury withdrawn for distribution by the public administrator of the county of New York, amending L. 1898, ch. 230, § 24, subd. 14.						

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[1] Bond issue to pay indebtedness.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	698	*All*.....	Greater New York charter, acquiring lands and easements therein for sewers, amending L. 1901, ch. 466, § 396.						
1917	699	*All*.....	Incorporating the Committee of Reference and Counsel of the Foreign Missions Conference of North America.						
1917	704	*All*.....	City of Buffalo, ward boundaries, amending L. 1914, ch. 217, § 3.						
1917	706	*All*.....	Providing for the acquisition of lands near the capital and state education building for a public park and office building and making an appropriation ($700,000) therefor.						
1917	713	*All*.....	Repealing L. 1913, ch. 388, authorizing the Hudson River Connecting Railroad Corporation to build bridge across Hudson river. and to authorize such corporation to construct a different bridge across such river between Castleton and Schodack Landing.						
1917	716	*All*.....	City of Salamanca, amending charter generally, L. 1913, ch. 507.						
1917	717	*All*.....	City of North Tonawanda, amending charter generally, L. 1907, ch. 752.						
1917	718	*All*.....	Certain land and lands under water adjacent to shore of Coney Island granted to city of New York for recreation piers.						
1917	719	*All*.....	Approval of the agreement between city of New York and New York Central and Hudson River Railroad Company by the public service commission for the First district, regarding regulation and improvement of said railroad and of the motive power used thereon, amending L. 1911, ch. 777, § 7, § 15a (added).						
1917	720	*All*.....	Commission created to investigate surface railroad conditions in city of New York on west side, and making an appropriation.						
		All......		1918	343[1]				

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[1] Reappropriation.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	722	*All*	Proceedings of the Rochester Railway and Light Company to increase its common stock ratified and confirmed.						
1917	725	*All*	City of Yonkers, amending charter generally, L. 1908, ch. 452.						
1917	728	*All*	Municipal court in the city of New York, districts and number of justices therein, amending L. 1915, ch. 279, tit. 1, § 5.						
1917	729	*All*	Deposits of the agreed compensation for property appropriated for use of improved canals, amending L. 1908, ch. 195, § 2.						
1917	732	*All*	Police commissioner of the city of New York authorized to restore Matthew J. McGrath to the rank of sergeant.						
1917	733	*All*	Commissioner of public safety of the city of Yonkers authorized to rehear charges and reinstate John Healy in police department.						
1917	734	*All*	Appropriation for maintenance and repair of improved state and county highways between Albany and New York.						
1917	735	*All*	Construction of a bridge across Mohawk river and the barge canal to replace the Schenectady–Scotia toll bridge.						
1917	736	*All*	Providing for the erection of monument to commemorate the services of the seventy-ninth regiment, New York state volunteers (Highlanders), and making an appropriation therefor.						
1917	737	*All*	Appropriation ($4,000) for compensating Robert H. Roy and John F. Hylan for expenses incurred by them in successfully defending their title as county judges of the county of Kings.						
1917	738	*All*	Appropriation ($2,500) for expenses of commissioners for promotion of uniformity of legislation in United States.						
		All		1918	343[1]				

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[1] Reappropriated.

The italicised matter following each chapter number indicates the part of such chapter treated as spe private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repeale by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	739	*All*	Appropriation ($15,000) to carry into effect certain provisions of the judiciary law in relation to appointments by the appellate division of the supreme court in second judicial department.[1]						
1917	740	*All*	Appropriation ($150,000) to pay expenses incurred in mobilization of the national guard in the year nineteen hundred and sixteen.						
1917	741	*All*	Unexpended balances of money made available for payment of compensation to certain employees at state hospital for extra service.						
1917	742	*All*	Canal board directed to make investigation for location of a new bridge over the Mohawk river between the village of Crescent and the village of Rexford and making an appropriation ($2,500) for such investigation.						
1917	743	*All*	Investigation and report of barge canal route Tonawanda to Buffalo, and making appropriation ($5,000) therefor.						
1917	744	*All*	Appropriation ($10,000) for the protection of the education building and property from injury or trespass.						
1917	745	*All*	Appropriation made for support and instruction of deaf mutes in certain institutions.						
1917	746	*All*	Appropriation ($2,500) for relief of women nurses.						
1917	747	*All*	Appropriation ($15,000) for acquisition of land in Tompkins county for game breeding farm.						
1917	748	*All*	Appropriation ($138.95) to pay assessment levied against the state by the city of Cortland.						
1917	750	*All*	Appropriation ($975) to pay Saint Mary's Roman Catholic Church of Rome, New York, for taking land for canal purposes.						
1917	751	*All*	Appropriation ($35,000) for improving Limestone creek in the village of Fayetteville, Onondaga county.						
		1		1918	339				

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[1] See L. 1917, ch. 386.

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	752	*All*	Reappropriating unexpended balance for construction of approaches to bridges over Erie canal in the village of Yorkville.						
1917	753	*All*	Appropriation ($15,000) for construction of a new bridge over Black river canal at East Whitesboro street in city of Rome.						
1917	754	*All*	Appropriation ($10,000) for preserving the shores of islands belonging to the state in Lake George.						
1917	755	*All*	Appropriation ($10,000) for protecting approaches to bridge across South bay in the county of Washington.						
1917	756	*All*	Appropriation ($16,500) for deepening the harbor channel and entrance thereto at the foot of Canandaigua Lake, in the county of Ontario.						
1917	757	*All*	Appropriation ($25,000) to reimburse members of the second regiment infantry, national guard, for property destroyed by fire.						
1917	758	*All*	Appropriation ($50,000) to defray the expense of inquiries by the attorney-general into matters concerning the public safety and public justice.						
		All......		1918	343[1]				
1917	759	*All*	Appropriation ($5,000) for the equipment of a state fish hatchery in the city of Dunkirk.						
1917	760	....	Appropriation ($55,000) for deepening channel of Ellicott creek and for repair of bridges crossing the same.						
		1.......		1918	642				
		All......		1918	85[2]				
1917	761	*All*	Appropriation ($30,000) for construction of new bridge over Erie canal at Hertel avenue in the city of Buffalo.						
1917	762	*All*	Direct tax levied for the purposes of the general fund and the debt sinking funds of the state.						
1917	763	*All*	Appropriation for the payment of principal and interest on the debt for the Saratoga Springs state reservation.						

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[1] Reappropriated.

[2] Appropriation for improvement.

The italicised matter following each chapter number indicates the part of such chapter treated as speci private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1917	764	*All*	Appropriations from the sinking funds of the state for payment of the interest on the state debt.						
1917	765	*All*	Appropriation ($2,500) for the state's share of the expense of paving East Whitesboro street, in city of Rome.						
1917	766	*All*	Appropriation ($1,000) for repairing Liberty street bridge over Keuka lake outlet in village of Penn Yan.						
1917	767	*All*	Appropriation ($7,000) for purchase of additional lands and making necessary repairs at the Bemus Point fish hatchery in the county of Chautauqua.						
1917	776	*All*	Fixing the date for the fall primary election in the year nineteen hundred and seventeen.						
1917	777	*All*	Providing for obtaining information from electors on days of registration and election in aid of the military census.						
1917	780	*All*	Appropriation ($8,000) for improvement of dyke across west branch of the Mohawk river, between the city of Cohoes and the village of Green Island, in county of Albany.						
1917	781	*All*	Appropriation ($12,000) for dredging Cowasselon creek in the county of Madison.						
1917	782	*All*	Appropriation for the joint legislative committee to investigate public service commissions.						
1917	784	*All*	Legalizing the proceedings for the incorporation of the village of East Bloomfield, Ontario county.						
1917	786	*6*	Repealing certain laws or portions of laws in relation to the schools and administration thereof in the cities of the state.						
1917	787	*All*	Incorporating the city of Glen Cove.[1]						
1917	788	*All*	Providing for the removal of the railroad structure of the Manhattan Railway Company on East Forty-second street in the city of New York.						

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[1] Ch. 787 approved at an election held June 30, 1917.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	789	*All*	The Steuben Finance Co., Inc., declared to be a valid corporation.						
1917	790	*All*	Votes in the board of supervisors of the county of Nassau, amending L. 1898, ch. 588, § 1a (added).						
1917	793	*All*	City of Tonawanda, amending charter generally, L. 1905, ch. 357, and repealing certain sections.						
1917	797	*All*	Changing boundaries of congressional districts of the state from Third district to the Tenth district, inclusive, amending L. 1911, ch. 890.						
1917	799	*All*	Changing boundaries of congressional districts, amending L. 1911, ch. 890.						
1917	804	*All*	Appointment of medical assistant by the district attorney of Kings county, amending L. 1896, ch. 772, § 6a (added).						
1917	807	*All*	Incorporating the New York Patriotic Fund.						
1917	809	*All*	Appropriations for the support of the government.						
1917	810	*All*	Officers and employees of the state or any civil division thereof permitted to accept office and serve on any board in connection with the national drafting act.						
1917	812	*All*	Legalizing the issuance of bonds of village of Tarrytown for paving and improving street known as Broadway.						
1917	813	*All* 11	Production, supply and control of the distribution of the necessaries of life and establishing the state food commission.	 1918	 384				
1917	816	*All*	Department of assessment and taxation of the city of Syracuse, amending L. 1906, ch. 75, §§ 1a (added), 2. 9.						
1917	817	*All*	Greater New York charter, appointment of emergency firemen, amending L. 1901, ch. 466, § 757 (added).						
1917	818	*All*	Taxes collected from mercantile and manufacturing corporations in the city of Utica, deemed revenues of such city.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1917	820	*All*.....	Town of Hempstead, in county of Nassau, authorized to issue bonds for an additional town house.						
1917	821	*All*.....	Issuance and sale of bonds of the board of education of city of Gloversville legalized.						
1918	1	*All*.....	Abandoning certain canal lands in town of Stillwater, Saratoga county, and authorizing the sale of same to United States.						
1918	2	*All*.....	Vocational high school building in city of Syracuse, rate of interest on bonds, amending L. 1914, ch. 299, § 4.						
1918	3	*All*.....	Making available for the New York guard certain moneys heretofore appropriated.						
1918	4	*All*.....	Providing for the harvesting and storage of ice on the Hudson river and the appointment of an ice comptroller and making an appropriaton therefor.						
		3, 4.....		1918	81				
1918	5	*All*.....	Appropriation for the legislative librarian, assistant librarian and messenger.						
1918	6	*All*.....	Holding town meetings in the year nineteen hundred and eighteen in certain towns.						
1918	9	*All*.....	Union free school district number two of the town of Wawarsing, Ulster county, authorized to file tax list with comptroller.						
1918	10	*All*.....	Method of payment of moneys from appropriation to acquire lands for state park purposes, amending L. 1917, ch. 146, § 3.						
1918	11	*All*.....	Making appropriations for the New York guard.						
1918	12	*All*.....	Providing for survey of lands under water and making an appropriation therefor.						
1918	13	*All*.....	Village of Sea Cliff, Nassau county, authorized to purchase bathing pavilion.						
1918	14	*All*.....	Village of Sea Cliff, Nassau county, authorized to lease lands owned by village.						
1918	15	*All*.....	City of New York, payment of cost of public improvements, amending charter, L. 1901, ch. 466, § 247.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	16	*All*.....	City of Gloversville, fiscal year and annual estimate, amending charter, L. 1899, ch. 275, § 70.						
1918	18	*All*.....	Village of Peekskill, time of election and laying out election districts, amending charter, L. 1883, ch. 117, tit. 2, § 4.						
1918	21	*All*.....	Appropriation for the expenses of the joint committee of legislature appointed to investigate into report of the board of statutory consolidation on simplification of the civil practice.						
1918	24	*All*.....	Appropriations for emergencies for current fiscal year and supplying deficiencies in former appropriations.						
1918	25	*All*.....	Changing the title of "acting superintendent of the poor" of Rensselaer county, to "county superintendent of the poor".						
1918	28	*All*.....	Appropriation for completion of improvement of the Cayuga and Seneca canals.						
1918	31	*All*.....	Legalizing proceedings of the board of supervisors of Tioga county in reference to changing the time for holding town meetings.						
1918	33	*All*.....	Trustees of Kingston Academy authorized to transfer its real property to Kingston city for public park.						
1918	34	*All*.....	Changing the boundaries of the congressional districts of the state, amending L. 1911, ch. 890.						
1918	35	*All*.....	Time for completion of the Rome and Osceola Railroad extended five years.						
1918	36	*All*.....	Charter village of Watkins. [Previous charter, L. 1861, ch. 125.]						
1918	37	*All*.....	Acting justice of court of special sessions of the city of Syracuse and divisions of such court, amending L, 1910, ch. 676, § 4a (added).						
1918	38	*All*.....	Municipal court of the city of Syracuse, amending L. 1906, ch. 520.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1918	40	*All*	City of Amsterdam, authorized to issue bonds for construction and equipment of fire house.						
1918	41	*All*	City of Amsterdam to issue bonds for extension of water system.						
1918	42	*All*	Objects and purposes and duties of trustees of State College of Forestry of Syracuse University, amending L. 1911, ch. 851, §§ 2, 4.						
1918	44	*All*	City of Yonkers, payment of state and county taxes, amending charter, L. 1908, ch. 452, § 2.						
1918	46	*All*	City of Buffalo, department of finance and accounts, amending charter, L. 1914, ch. 217, § 109 (added).						
1918	48	*All*	Village of Saltaire, Suffolk county, authorized to operate ferries and borrow money to purchase ferries.						
1918	51	*All*	City of Buffalo, filling vacancies in office of mayor or councilman, amending charter, L. 1914, ch. 217, § 23.						
1918	55	*All*	Appropriation for expenses incurred under agriculture law relating to dogs.						
1918	56	*All*	Town of Lexington, Greene county, authorized to issue bonds to pay certificates of indebtedness for repairs to bridges, highways and streets.						
1918	57	*All*	Corporate existence of Staten Island Association of Arts and Sciences continued under name of Staten Island Institute of Arts and Sciences.						
1918	60	*All*	Tax levy for repair of highways, upon assessment rolls of town of Nassau, Rensselaer county, legalized.						
		Title		1918	225				
		1		1918	225				
1918	61	*All*	Corporate existence of the First Presbyterian Church in village of Aurora continued under name of Presbyterian Church, Aurora, N. Y.						
1918	63	*All*	Greater New York charter, sales of tax liens, amending L. 1901, ch. 466, § 1028.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	65	*All*.....	Albany county, certain buildings not included within the provisions of the act regulating the manner of contracting, amending L. 1884, ch. 368, § 12.						
1918	66	*All*.....	Church of Saint John on Cat Rock road between Peekskill and Garrison, enabled to sell real estate.						
1918	70	*All*.....	Appropriations for maintenance and repair of improved state and county highways.						
1918	71	*All*.....	Repealing L. 1904, ch. 152, in relation to the board of equalization in and for the county of Greene.						
1918	72	*All*.....	Supervisor of the town of Cairo, Greene county, to add to assessment roll all unpaid taxes in said town which shall be reassessed by board of supervisors of Greene county.						
1918	76	*All*.....	State scholarships in Cornell University continued after termination of the war to those entering the service.						
1918	79	*All*.....	Uncollected taxes in Schoharie county collected by advertisement and sale of land through county treasurer.						
1918	80	*All*.....	Board of directors of the Mount Sinai Hospital to be known and designated as board of trustees.						
1918	81	....	Appointment and powers of ice comptroller, amending L. 1918, ch. 4, §§ 3, 4.						
1918	82	*All*.....	Sanitary trunk sewer in Westchester county, amending generally L. 1917, ch. 646.						
1918	85	*All*.....	Appropriation for improvement of channel of Ellicott creek from Erie canal to city line of Tonawanda.						
1918	87	*All*.....	Opening and closing of polls at election in the village of Owego, amending charter, L. 1851, ch. 111, § 8.						
1918	90	*All*..... 1, 2, 3, 5	Providing for a commissioner of records of the county of Bronx.	1918	299				
1918	91	*All*.....	City of Little Falls, officers, their terms and compensation and annual city tax levy, amending charter, L. 1895, ch. 565, §§ 11, 17, 53.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	99	*All*.....	City of Jamestown, city court, amending charter, L. 1907, ch. 387.						
1918	101	*All*.....	City of Mount Vernon, borrowing money upon temporary certificates of indebtedness, amending charter, L. 1892, ch. 182, § 166, subd. 7a (added).						
1918	102	*All*.....	Corporate existence of the Houchin-Aiken Company extended.						
1918	103	*All*.....	Reappropriating unexpended balance for highway improvement.						
1918	106	*All*.....	Village of Owego authorized to issue bonds to pay indebtedness.						
1918	108	*All*.....	City of Olean, police justice, amending charter, L. 1915, ch. 535, §§ 24, 26.						
1918	109	*All*.....	Treasurer of county of Albany to pay to overseers of the poor of each town in the county money for relief of poor, amending L. 1884, ch. 354, § 12.						
1918	115	*All*.....	Provisions of any statute referring to New York Magdalen Home shall be deemed to refer to Inwood House.[1]						
1918	122	*All*.....	Report to the legislature of the construction by federal government of a canal on Long Island, amending L. 1917, ch. 317, § 1.						
1918	124	*All*.....	City of Dunkirk, amount appropriated for free library, amending L. 1909, ch. 538, § 170.						
1918	127	*All*.....	Salaries of second assistant district attorney of Richmond county and clerks, amending L. 1914, ch. 265, §§ 3, 4.						
1918	128	*All*.....	Appropriation for Luella R. North, widow of Charles H. North, for payment of salary as former medical superintendent of Dannemora State Hospital.						
1918	129	*All*.....	Sale and redemption of real estate sold for taxes in the county of Onondaga, amending L. 1867, ch. 858, §§ 4, 6, 9.						

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[1] See L. 1915, ch. 66.

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1918	131	*All*.....	Abolishing the office of police justice in the towns of the county of Suffolk, and legalizing election of commissioners, amending L. 1909, ch. 583.						
1918	133	*All*.....	City of Binghamton authorized to issue bonds to pay indebtedness of city.						
1918	135	*All*.....	Appropriation to reimburse the city of Troy and town of Waterford for money erroneously paid to the state.						
1918	138	*All*.....	Hyde Park fire department in Dutchess county, amending L. 1860, ch. 257, § 7, subd. 3, par. e (added), § 13.						
1918	139	*All*.....	Onondaga county to pay portion of expense of eliminating dangerous underpass in town of Camillus.						
1918	145	*All*.....	Creating a department for the placing of dependent children for the county of Onondaga.						
1918	150	*All*.....	Segregation of feeble-minded and selection of site for new hospital for insane by hospital development commission, amending L. 1917, ch. 238, § 2, subds. 10, 11 (added).						
1918	151	*All*.....	Appropriations for the support of government.						
1918	152	*All*.....	Reappropriating unexpended balances of appropriations for improvement of Erie, Oswego and Champlain canals.						
1918	153	*All*.....	Appropriating miscellaneous receipts on account of improvement of Cayuga and Seneca canals.						
1918	155	*All*.....	Supervisors of the towns of Franklin county shall add to assessment rolls unpaid taxes.						
1918	156	*All*.....	Power of purchasing committee of the office of sheriff of Franklin county, amending L. 1902, ch. 29, § 8, subd. c; § 8, subd. g (repealed).						
1918	157	*All*.....	Appropriations for improvement of town highways and highways and bridges on Indian reservation.						
1918	162	*All*.....	Legalizing bond and mortgage given by trustees of Neahtawanta Lodge, I. O. O. F. of Fulton, N. Y.						

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Statutes				**Amended or otherwise affected by**			**Expressly repealed by**		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1918	163	*All*.....	Incorporating the General Board of Religious Education.						
1918	164	*All*.....	Reappropriating unexpended balance for improvement of public highways.						
1918	167	*All*.....	Charter village of Waterford, amending generally L. 1859, ch. 243.						
1918	168	*All*.....	Appropriation for exhibit of agriculture and dairying at Grand Central Palace, New York city.						
1918	169	*All*.....	City of Amsterdam, officers, terms and compensation, tax levy, amending charter, L. 1911, ch. 242, §§ 8, 36, 110.						
1918	172	*All*.....	Legalizing proceedings of the town of Marcy, Oneida county, in construction of highway bridge and the issue of bonds.						
1918	173	*All*.....	Union free school district of Sangerfield and Marshall, Oneida county, authorized to establish sinking fund for redemption of bonds.						
1918	175	*All*.....	City of Port Jervis, annual city tax levy, amending charter, L. 1907, ch. 753, § 54, subd. 9.						
1918	178	*All*.....	City local option elections in year nineteen hundred eighteen.						
1918	179	*All*.....	New York city, auctions and auctioneers, amending consolidation act, L. 1882, ch. 410, § 1991.						
1918	184	*All*.....	Appropriation for improvement of Erie, Oswego, and Champlain canals.						
1918	185	*All*.....	Appropriation of miscellaneous receipts for proper terminals and facilities for barge canal traffic.						
1918	187	*All*.....	Incorporating the trustees of the Northern New York Conference of Methodist Episcopal Church, amending generally, L. 1873, ch. 197.						
1918	188	*All*.....	Appropriation to Morris S. Halliday for balance of salary, having resigned from the senate to enlist in the military service.						
1918	191	*All*.....	County auditor of county of Onondaga, amending generally, L. 1917, ch. 5.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1918	194	*All*	City of Jamestown authorized to issue bonds to cover cost of paving Buffalo street.						
1918	195	*All*	City of Jamestown, election for city officers, amending charter, L. 1907, ch. 387, § 16.						
1918	199	*3-12*	Repealing provisions of education law relating to town boards of education and providing for restoration of former conditions with respect to school districts.						
1918	200	*All*	Village of Peekskill power of trustees to borrow money, amending charter, L. 1883, ch. 117, tit. 10, § 1.						
1918	201	*All*	Appropriation for commission to investigate port conditions at the port of New York.						
1918	202	*All*	Village of Mohawk, Weller library, amending charter, L. 1844, ch. 157, § 17, subd. 25.						
1918	203	*All*	City of Mount Vernon, assessment bonds, amending charter, L. 1892, ch. 182, § 201.						
1918	205	*All*	City of Dunkirk, salary of clerk, amending charter, L. 1909, ch. 538, § 229.						
1918	206	*All*	City of Kingston, statement of financial condition, amending charter, L. 1896, ch. 747, § 122.						
1918	207	*All*	City of Cortland, salary of city assessors, amending charter, L. 1900, ch. 160, § 14.						
1918	208	*All*	City of Ogdensburg, clearing sidewalks of snow and ice, amending charter, L. 1893, ch. 87, § 946 (added).						
1918	209	*All*	City of Troy, assessment of property, amending charter, L. 1892, ch. 670, and repealing tit. 7, § 8.						
1918	212	*All*	Town of Mayfield, Fulton county, tax levy for repair of highways legalized.						
1918	213	*All*	Certain lands at Lawrence, Nassau county, released by state to Nassau industrial school.						
1918	214	*All*	Franchise of ferry across Lake Champlain renewed.						
1918	217	*All*	City of Ogdensburg, compensation of treasurer, amending charter, L. 1893, ch. 87, § 49.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	218	*All*	City of Ogdensburg, sprinkling of streets, amending charter L. 1893, ch. 87, § 89j (added).						
1918	220	*All*	Issuance and sale of bonds for improving Center street in the village of East Aurora legalized.						
1918	221	*All*	Preparation of assessment rolls for the townships and tax districts therein in the county of Nassau, amending L. 1916, ch. 541.						
1918	225	*All*	Legalizing tax levy for repair of highways in town of Nassau, Rensselaer county, amending L. 1918, ch. 60, title, § 1.						
1918	226	*All*	Incorporating the Grand Lodge of the Independent Order of Odd Fellows.						
1918	227	*All*	City of Sherill, amending charter generally, L. 1916, ch. 172, §§ 41, 100, 102, 143, 201.						
1918	230	*All*	Purchasing agent for the county of Monroe, amending L. 1902, ch. 309, § 2.						
1918	231	*All*	Incorporating the New York state convention of Universalists, amending L. 1862, ch. 188, §§ 1, 2.						
1918	232	*All*	City of Watertown, salary of city judge, amending charter, L. 1897, ch. 760, § 230.						
1918	233	*All*	Village of Ballston Springs authorized to issue bonds for the purpose of equipping the volunteer fire department.						
1918	235	*All*	City of Syracuse, manner of voting at elections, amending charter, L. 1885, ch. 26, § 9.						
1918	237	*All*	Village of Mount Kisco authorized to issue sewer bonds to pay certificates of indebtedness.						
1918	238		Renewal of chauffeur's and operator's motor vehicle licenses issued to persons entering the military and naval service.						
1918	240	*All*	Corporations authorized to cooperate with other corporations for the winning of the war.						
1918	245	*All*	Appropriation for school district number twenty-seven in the town of Dryden, Tompkins county.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	247	*All*.....	Mount Morris union free school district made subject to provisions of the education law, and repealing L. 1866, ch. 727, §§ 2-32; L. 1887, ch. 199, L. 1888, ch. 267, L. 1892, ch. 355.						
1918	249	....	Re-enacting certain provisions of the workmen's compensation law.						
1918	250	*All*.....	Defining the forty-first and forty-second congressional districts of the state.						
1918	251	*All*.....	Amount of income of the property of the DeVeaux College for Orphan and Destitute Children, amending L. 1853, ch. 243, § 1.						
1918	259	*All*.....	City of Oneida, salaries of mayor and aldermen, amending charter, L. 1911, ch. 648, § 14.						
1918	260	*All*.....	Assessment of property and collection of taxes in towns of Westchester county, amending L. 1916, ch. 105, § 23.						
1918	261	*All*.....	Appropriation for the payment to widow of salary of William Temple Emmet, deceased.						
1918	262	*All*.....	Appropriation to reimburse Charles R. Hotaling for expenses paid for defending himself against charges of misconduct in connection with the expenses of the joint legislative committee.						
1918	263	*All*.....	Constitutional oath of an attorney and counselor at law may be given by commanding officer of regiment.						
1918	266	*All*.....	Providing for paving of streets in the village of Ellicottville and for the payment of the cost of the share of the village of the cost of paving.						
1918	272	*All*.....	Armory commission of the third brigade district authorized to reconvey lands heretofore appropriated for military purposes.						
1918	273	*All*.....	Duration of use for military purposes of the state lands at Beekman acquired for the Industrial Farm Colony, amending L. 1917, ch. 384, § 1.						

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private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repeale by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	286	*All*.....	Lands in town of Volney, Oswego county, given under will of H. Salem Curtis, accepted by the state as a game preserve.						
1918	295	*All*.....	County road system and the construction and maintenance of county roads, amending L. 1910, ch. 564, §§ 1, 2.						
1918	299	*All*.....	Providing for commissioner of records of Bronx county, amending L. 1918, ch. 90, §§ 1–3, 5.						
1918	304	*All*.....	Legalizing tax sales in Rensselaer county.						
1918	313	*All*.....	City of Yonkers, water rents and frontage tax, amending charter, L. 1908, ch. 452, art. 8, §§ 8, 9.						
1918	338	*All*.....	Emergency appropriation for repair of highways and bridges for transportation of army trucks.						
1918	339	*All*.....	Making a reappropriation for improving Limestone creek in village of Fayetteville, amending L. 1917, ch. 751, § 1.						
1918	340	*All*.....	Reappropriating unexpended balance of appropriation for barge canal terminals and facilities.						
1918	341	*All*.....	Appropriation for improvement of Glen and Mill creek, in county of Schuyler.						
1918	342	*All*.....	Establishing a bureau of venereal diseases and making an appropriation therefor.						
1918	343	*All*.....	Reappropriating unexpended balances of former appropriations.						
1918	344	*All*.....	Creation of the barge canal dedication commission and making an appropriation therefor.						
1918	345	*All*.....	Transportation and maintenance of civil war veterans to the battlefield of Knoxville, Tennessee.						
1918	346	*All*.....	Construction of dive culvert at Rome for maintaining water level of canal and making an appropriation therefor.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	347	*All*.....	Appropriation for William H. Donahue for services as chief factory inspector.						
1918	348	*All*.....	Reappropriating unexpended balance of former appropriation for mobilization of national guard.						
1918	349	*All*.....	Appropriation for salary of clerk to treasurer of New York State Soldiers and Sailors' Home.						
1918	350	*All*.....	Appropriating surplus moneys to be distributed by commissioner of agriculture among the several towns and cities of the state.						
1918	351	*All*.....	Construction of bridge over Cayuga and Seneca canal at Lake street in city of Geneva, and making appropriation therefor.						
1918	353	*All*.....	Appropriations from the sinking funds of the state for payment of interest on the state debt.						
1918	354	*All*.....	Appropriation for payment of principal and interest on the debt for the Saratoga Springs state reservation.						
1918	356	*All*.....	Appropriation for an additional public employment office.						
1918	362	*All*.....	Compensation of officer elected to discharge the duties of county judge and surrogate in county of Oneida, amending L. 1849, ch. 306, § 3, § 4 (added).						
1918	363	*All*.....	County appropriations for maintenance of tuberculosis hospital, in city of Poughkeepsie, amending L. 1910, ch. 465, § 3.						
1918	367	*All*.....	Town board of Ava, Oneida county, authorized to convey certain cemetery property.						
1918	368	*All*.....	Appropriations for annual contributions to sinking funds.						
1918	370	*All*.....	Establishing a ferry from and to Gravely Point, Cumberland Head, in town of Plattsburg to and from Grand Isle in state of Vermont.						
1918	371	*All*.....	Salary of the overseer of the poor in the town of Haverstraw, Rockland county, amending L. 1879, ch. 74, § 6.						
1918	381	*All*.....	City of Johnstown, annual tax levy, amending charter, L 1905, ch. 593, § 67.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	382	*All*.....	Ex-officio directors of the Buffalo Fine Arts Academy, amending L. 1902, ch. 526, § 2.						
1918	383	*All*.....	Payments of bonds for highway improvement by towns in Westchester county, amending L. 1905, ch. 17, § 2, § 3 (added).						
1918	384	*All*.....	Power of the state food commission to fix difference between purchase and selling price of necessaries, amending L. 1917, ch. 813, § 11.						
1918	391	*All*.....	Abandonment of state route number one, in county of Dutchess, and construction of substitute highway by state commission on new prisons.						
1918	392	*All*.....	Providing for special enumeration in towns and cities for the purpose of readjusting election districts.						
1918	393	*All*.....	Fees of county clerk of the county of Greene, amending L. 1900, ch. 161, §§ 2, 3, 5.						
1918	396	*All*.....	Villiage of Ossining authorized to issue bonds for funding certain notes issued to pay for elimination of grade crossing.						
1918	401	*All*.....	Supervisor of town of Middlebury, Wyoming county, authorized to dispose of unexpended balance of tax of lighting district.						
1918	405	*All*.....	Parole and rearrest of females committed to or escaping from institutions carrying on reformatory work for women in New York city.						
1918	406	*All*.....	Annulling the corporate existence and vacating the charters of certain corporations fostering German language and literature.						
1918	407	*All*.....	Abolishing the town of Wilmurt in county of Herkimer and providing for annexation of its territory to adjacent towns of Webb and Ohio.						
1918	408	*All*.....	Improvement of streets in sidewalk districts in town of Brighton, Monroe county, amending L. 1917, ch. 190, § 1–5.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	410	*All*.....	Legalizing official acts of notaries public and commissioners of deeds.						
1918	414	*All*.....	Creating a state commission to inquire into the subject of retirement pensions for state and municipal officers and employees and making an appropriation therefor.						
1918	416	*All*.....	Salary of sheriff of Niagara county, amending L. 1894, ch. 160, § 1.						
1918	418	*All*.....	Commitment of females for observation and study, amending inferior criminal courts act of New York city, L. 1910, ch. 659, § 77a (added)						
1918	419	*All*.....	Inferior criminal courts act of New York city, sessions of night courts, amending L. 1910, ch. 659, § 77.						
1918	423	*All*.....	Appropriation for compensating Spencer J. Stewart for defending himself against charges while division engineer of state highway commission.						
1918	424	*All*.....	Extending time for completion of supplement to the statutory record of unconsolidated laws, amending L. 1917, ch. 325, § 1.						
1918	425	*All*.....	Appropriation for making a survey of Eighteen Mile creek in the county of Niagara.						
1918	427	*All*.....	Appropriation for making survey for improvement of Mill river in town of Hempstead.						
1918	428	*All*.....	Appropriation for repairing sea wall in town of Southold, Suffolk county.						
1918	429	*All*.....	Appropriation for reimbursing William R. Stewart for amounts paid out by him in investigation of state board of charities.						
1918	430	*All*.....	Providing for the preparation of a supplement to the statutory record of consolidated laws, and making an appropriation therefor.						
1918	431	*All*.....	Appropriation for the payment of state's portion of expense of a public market in city of Ogdensburg.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	436	*All*.....	Village of Ossining authorized to make reapportionment and reassessment of portion of expense of sewer system.						
1918	440	*All*.....	Town board of town of Southampton authorized to contract for replacing the tide gates in the Shinnecock and Peconic canal.						
1918	441	*All*.....	Incorporating the Brick Church Cemetery Association of East Whitehall, New York.						
1918	446	*All*.....	City of Watertown, estimates of school expenditures, amending charter, L. 1897, ch. 760, § 92.						
1918	447	*All*.....	City of Watertown, compensation of assessors, amending charter, L. 1897, ch. 760, § 58.						
1918	448	*All*.....	Condemnation of lands for local improvements in the city of Syracuse, amending L. 1914, ch. 300, §§ 1, 2.						
1918	449	*All*.....	City of Syracuse, use of water supply by town of Skaneateles, amending L. 1906, ch. 631, § 2a (added).						
1918	450	*All*.....	Common council of city of Oneonta may vote extra compensation to city chamberlain.						
1918	451	*All*.....	City of Lockport authorized to issue bonds for acquiring property in city of North Tonawanda for the use of waterworks system.						
1918	452	*All*.....	City of Lockport, tax budget, amending charter, L. 1911, ch. 870, §§ 102, 105, subds. 3, 4, § 235.						
1918	453	*All*.....	City of Olean, hydrant tax, amending charter, L. 1915, ch. 535, § 54.						
1918	454	*All*.....	City of Hudson, increasing salaries of police officers, amending charter, L. 1895, ch. 751, §§ 79, 185.						
1918	455	*All*.....	City of Lockport number of police sergeants, amending charter, L. 1911, ch. 870, § 113.						
1918	462	*All*.....	Charter city of Watervliet. [Previous charter, L. 1911, ch. 184].						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	463	*All*.....	Confirming sale and deed to Silas Krom of certain real estate in town of Marbletown, Ulster county, and releasing to him interest of the state.						
1918	464	*All*.....	Conferring jurisdiction upon the county court of Chautauqua county to adjudicate upon certain cases of children and of adults and regulating procedure.						
1918	469	*All*.....	Duties and compensation of chairman of board of supervisors in Oneida county, amending L. 1908, ch. 418, § 2.						
1918	471	*All*.....	Incorporating the American Power Boat Association.						
1918	474	*All*.....	Publication of lists and notices in the collection of taxes in the county of Oneida, amending L. 1902, ch. 559, § 6.						
1918	475	*All*.....	City of Syracuse, collection of unpaid local assessments, amending L. 1906, ch. 75, § 16.						
1918	476	*All*.....	City of Mechanicville authorized to cancel certain contract for collection of garbage.						
1918	477	*All*.....	Canal Board release to city of Syracuse rights of way for street over canal terminal lands.						
1918	478	*All*.....	City of Buffalo, filling vacancy in office of supervisor, amending charter, L. 1914, ch. 217, § 346.						
1918	479	*All*.....	City of Auburn, creation of pension fund for police department, amending charter, L. 1906, ch. 185, §§ 34, 64.						
1918	480	*All*.....	Salaries of certain officers in city of Canandaigua, amending charter, L. 1913, ch. 371, § 13.						
1918	481	*All*.....	City of Elmira, officers and payment of taxes, amending charter L. 1906, ch. 477, §§ 31, 75.						
1918	482	*All*.....	City of Fulton, amending charter generally, L. 1902, ch. 63.						
1918	483	*All*.....	City of Glens Falls, mayor's salary, amending charter, L. 1908, ch. 29, § 9, subd. 3.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	485	*All*.....	Common council of city of Middletown may determine the payment of portion of expense of trunk sewer.						
1918	486	*All*.....	City of New Rochelle, disposition of collections from special assessments, amending charter, L. 1910, ch. 559, §§ 119, 121.						
1918	487	*All*.....	City of Oswego authorized to increase the budget of the water department.						
1918	488	*All*.....	City of Rome, taxes, amending charter, L. 1904, ch. 650, § 147.						
1918	489	*All*.....	City of Yonkers authorized to issue bonds for meeting deficiency in estimated revenues.						
1918	492	*All*.....	Confidential clerk and court stenographer in city court of Buffalo, amending L. 1909, ch. 570, § 10.						
1918	495	*All*.....	City of Rochester, new city court, amending charter, generally, L. 1907, ch. 755.						
1918	497	*All*.....	City of Rochester, offices and positions, amending charter, L. 1907, ch. 755, §§ 26, 61.						
1918	500	*All*.....	City of New York, qualifications of members of fire department, amending charter, L. 1901, ch. 466, § 734.						
1918	501	*All*.....	City of New York, qualifications of patrolmen, amending charter, L. 1901, ch. 466, § 284.						
1918	502	*All*.....	City of New York, obstructions on piers, wharves, and bulkheads, amending charter, L. 1901, ch. 466, § 849.						
1918	503	*All*.....	Municipal court act of New York city, payment of judgment for wages, amending L. 1915, ch. 279, § 142, subd. 2.						
1918	504	*All*.....	City of New York, issue of corporate stock notes, amending charter, L. 1901, ch. 466, § 189.						
1918	505	*All*.....	City of New York, annual appropriation for life saving service, amending charter, L. 1901, ch. 466, § 230, subd. 23-a (added).						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	506	*All*.....	Certain lands under water in boroughs of Brooklyn and Queens released to city of New York for protection of public and private beaches.						
1918	509	*All*.....	Authorizing the commissioners of the sinking fund of the city of New York to apply for grant of certain lands under water of Eastchester creek, amending L. 1916, ch. 509, § 1.						
1918	510	*All*.....	Powers and duties of grade crossing commission transferred to board of estimate and apportionment of city of New York, amending L. 1903, ch. 507, §§ 15–19 (added).						
1918	511	*All*.....	City of New York, trustees of benevolent fund of late city of Brooklyn, amending charter, L. 1901, ch. 466, § 809a.						
1918	512	*All*.....	City of New York, Hunter College, amending charter, L. 1901, ch. 466, § 1143.						
1918	513	*All*.....	City of New York, support of poor persons by relatives, amending, L. 1901, ch. 466, § 683.						
1918	514	*All*.....	Certain land below the line of original high-water mark at Hunt's Point, in borough of Bronx, city of New York, permitted to be conveyed to such city, amending L. 1916, ch. 499, title, § 1.						
1918	515	*All*.....	City of New York, surface improvements, amending charter, L. 1901, ch. 466, §§ 180, 818.						
1918	516	*All*.....	Inferior criminal courts act of New York city, probation, amending L. 1910, ch. 659, § 98.						
1918	517	*All*.....	Jurisdiction of the court of special sessions in New York city, amending L. 1910, ch. 659, § 31, subd. 3.						
1918	520	*All*.....	Compensation of port wardens of the port of New York and making an appropriation therefor, amending L. 1857, ch. 405, § 8a (added).						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	521	*All*	City of Syracuse, cancellation of contracts in construction of intercepting sewers, amending L. 1907, ch. 356, §§ 8a, 8b (added).						
1918	522	*All*	City of Buffalo, police pension fund, amending charter, L. 1914, ch. 217, § 264.						
1918	523	*All*	City of Jamestown, establishing pension fund for employees, amending charter. L. 1907, ch. 387, §28a (added).						
1918	524	*All*	City of Jamestown, salaries, amending charter, L. 1907, ch. 387, § 28, subds. 2, 4, 5, 6.						
1918	525	*All*	City of Jamestown, amending charter generally, L. 1907, ch. 387.						
1918	526		Salary of commissioner of jurors of the county of Richmond, amending L. 1899, ch. 441, § 4, subd. 3.						
1918	527	*All*	Composition of the firemen's pension fund for the city of Schenectady, amending L. 1907, ch. 182, § 2, subd. 5.						
1918	528	*All*	Owners or mortgagees of lands in city and town of Dunkirk, Chautauqua county, enabled to redeem same from tax sales.						
1918	529	*All*	Authorizing the commissioners of land office to quit-claim interest of the state in certain lands under water of Hudson river at Poughkeepsie to De Laval Separator Company.						
1918	531	*All*	City of Buffalo, firemen's relief and pension fund, amending charter, L. 1914, ch. 217 §§ 277, 279.						
1918	532	*All*	Creating a police and fire pension fund for the city of Saratoga Springs.						
1918	534	*All*	City of Buffalo, public school teacher's retirement fund, amending charter, L. 1914, ch. 217, §§ 296, 297, 301, 302.						
1918	535	*All*	Description of the district or area to constitute the Bronx valley sanitary sewer district in Westchester county, amending L. 1917, ch. 646, § 1.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	536	*All*.....	City of New York duties of commissioner of public charities delegated, amending charter, L. 1901, ch. 466, § 659.						
1918	537	*All*.....	City of New York, establishing line of high water, amending charter, L. 1901, ch. 466, § 818a.						
1918	538	*All*.....	Providing for the laying out one or more public streets or boulevards across Jamaica bay.						
1918	539	*All*.....	Municipal court district boundaries in the borough of Brooklyn, amending L. 1915, ch. 279, § 5, subd. c.						
1918	542	*All*.....	City of Rome, amending charter generally, L. 1904, ch. 650.						
1918	545	*All*.....	Appropriation to pay daughters and sons of the late William J. Carr, justice of the supreme court, his salary.						
1918	547	*All*.....	City of Rochester, ward boundaries, amending charter generally, L. 1907, ch. 755.						
1918	548	*All*.....	Board of estimate and apportionment of New York city authorized to pay to the daughters and sons of the late William J. Carr, late justice of the supreme court, balance of his compensation for the year.						
1918	553	*All*.....	Acquiring an option on a new site for Cortland State Normal and Training School and making an appropriation therefor.						
1918	554	*All*.....	Appropriation for the improvement and extension of the drainage and sewer systems at Clinton prison.						
1918	555	*All*.....	Providing for construction of barge canal terminals at certain places on Hudson river, and making appropriation therefor.						
1918	556	*All*.....	Providing for increased compensation to civilian employees of the state during the existing war, and making an appropriation therefor.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	559	*All*.....	Establishing and permanently marking a portion of the boundary line between the counties of Delaware and Schoharie, and making an appropriation therefor.						
1918	560	*All*.....	Appropriation for defraying the expenses of the interstate bridge commission.						
1918	561	*All*.....	Establishing and permanently marking boundary line between town of Warrensburg and town of Luzerne in Warren county, and line between Warren county and Saratoga county, and making appropriation therefor.						
1918	562	*All*.....	Providing for establishing and permanently marking a portion of the north boundary line of the county of Ulster.						
1918	563	*All*.....	Appropriation for completing bridge over Rondout creek, constituting part of state highway route number three.						
1918	564	*All*.....	Restoring the Black river canal to a navigable condition for its entire length and making an appropriation therefor.						
1918	565	*All*.....	Prevention of floods on property abutting Griffin creek, in village of Cuba, Allegany county, and making an appropriation therefor.						
1918	566	*All*.....	Appropriations for increases in salaries of guards in state prisons and of certain other officers and employees.						
1918	567	*All*.....	Appropriation to pay deficiency in salary of special deputy excise commissioner of the county of Westchester.						
1918	571	*All*.....	Appropriations for the support of the government.						
1918	574	*All*.....	Reviving and extending the corporate existence of The Buffalo Co-operative Brewing Company of Buffalo, New York.						
1918	575	*All*.....	Commissioners of the land office to release to Eugenia Quinlan interest of the state in certain property.						
1918	580	*All*.....	Assessment of barge canal terminal lands in the borough of Brooklyn for street improvement.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1918	581	*All*.....	Assessment of barge canal terminal lands on the easterly shore of East river, New York city, for the benefit derived by street improvement.						
1918	582	*All*.....	Incorporating the Lamoka Electric Water Power Corporation of Corning, New York.						
1918	583	*All*.....	City of New York, duties of trustees of College of the City of New York, amending charter, L. 1901, ch. 466, § 1131.						
1918	584	*All*.....	City of New York, teachers' retirement fund of Hunter's College, amending charter, L. 1901, ch. 466, § 1146 (added).						
1918	585	*All*.....	Contracts for the construction of public works.						
1918	586	*All*.....	Completion of the construction of essential rapid transit lines in time of war, and the powers of the public service commission for the first district, with respect to uncompleted contracts for such construction.						
1918	587	*All*.....	Examination of special jurors in counties having a population of one million or more, amending L. 1901, ch. 602, § 4.						
1918	588	*All*.....	Connecting ship canal between Gravesend bay and Sheepshead bay to be constructed by United States government on Long Island and making appropriation for expenses.						
1918	589	*All*.....	Creation of a commission to prepare preliminary plans for the construction of a marine terminal in city of Yonkers.						
1918	592	*All*.....	Appropriation for purpose of supplementing facilities at barge canal terminals.						
1918	593	*All*.....	Appropriation for counsel fees and expenses in the trial of Warren B. Hooker, as justice of the supreme court.						
1918	594	*All*.....	Appropriation to reimburse the Commonwealth Publishing company of New York city for publication of propositions and session laws of 1913.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	596	*All*.....	Consolidation of Cliff Electrical Distributing Company, The Niagara Falls Power Company and Hydraulic Power Company of Niagara Falls.						
1918	597	*All*.....	Authorizing any new corporation constituted by the consolidation of Cliff Electrical Distributing Company, The Niagara Falls Power Company and Hydraulic Power Company of Niagara Falls to utilize water from Niagara river.						
1918	598	*All*.....	Defining the employment of James Ahern as forest ranger to the conservation commission.						
1918	599	*All*.....	Defining employment of George Ploeser as an engineer in state institution known as "The New York House of Refuge."						
1918	600	*All*.....	Settlement of compensation or damages where claim was not duly filed with court of claims in the appraisal of lands, structures and waters for use of improved canals, amending L. 1908, ch. 195, § 2.						
1918	601	*All*.....	City of Watertown, amending charter generally, L. 1897, ch. 760.						
1918	602	*All*.....	Permitting the Lehigh Valley Railway Company and Lehigh and New York Railroad Company to apply for revision of taxes.						
1918	603	*All*.....	Court of claims given jurisdiction to determine claim of Cooper-Snell Company for extra work and damages in construction of Dolgeville village county road.						
1918	604	*All*.....	Court of claims to determine damages alleged to have been sustained by the overflow of Mohawk river near Schenectady.						
1918	605	*All*.....	Jurisdiction conferred on court of claims to determine claim of Fred R. Butterfield for damages occasioned by the canal system.						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	Ch.	§	Subject and Disposition	Law	Ch.	§	Law	Ch.	§
1918	606	*All*	Extending the time for filing claims for compensation or damages for or on account of appropriation of property for canals and terminals.						
1918	607	*All*	Court of claims authorized to determine claims arising during the performance of public contracts.						
1918	608	*All*	Jurisdiction upon court of claims to determine claim of Dudley P. Babcock for damages on account of injuries while employed in state highway department.						
1918	609	*All*	Court of claims given jurisdiction to determine claim of Vincent Moffat for damages alleged to have been sustained while employed at Ossining state's prison.						
1918	610	*All*	Jurisdiction conferred on court of claims to determine claim of Frederick H. Rhodey and Frederick Clawson on account of certain contract for highway construction.						
1918	611	*All*	Court of claims to determine claims on account of personal injuries causing the death of Julius Lewis while member of the national guard.						
1918	612	*All*	Court of claims to determine damages occasioned by changing bridges and approaches over canals and in connection with canal terminals.						
1918	613	*All*	Court of claims to determine alleged claim of Casper A. Briggs on account of injuries while confined in Hudson River State Hospital.						
1918	614	*All*	Court of claims to hear claim of Mary Gleason on account of personal injuries received while nurse in Manhattan State Hospital.						
1918	615	*All*	City of Buffalo, taxation, amending charter, L. 1914, ch. 217, §§ 115, 116a, 119, 148, 152, 153, 172, 173, 194.						
1918	616	*All*	City of Schenectady, assessment of taxes, amending charter, L. 1907, ch. 756, art. 7, (repealed), art. 7 (added).						

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Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1918	617	*All*.....	City of New York, removal of inspectors of buildings, amending charter, L. 1901, ch. 466, § 406.						
1918	618	*All*.....	Salaries of assistant district attorneys in the county of New York, amending consolidation act, L. 1882, ch. 410, § 1503.						
1918	619	*All*.....	City of New York, powers and duties of board of assessors, amending charter, L. 1901, ch. 466, §§ 944, 946, 950, 951, 953, 955.						
1918	623	*All*.....	Destruction of obsolete documents and records of conveyances and other instruments relating to lands in Kings county, amending L. 1894, ch. 365, § 19a (added).						
1918	625	*All*.....	Requiring all able-bodied male persons between ages of eighteen and fifty years to be employed in useful occupation.						
1918	626	*All*.....	Providing for the disposition of certain unexpended balances for highway improvement and providing for submission of the same to the people in 1918, amending L. 1912, ch. 298, § 6a (added).						
1918	629	*All*.....	City of Buffalo, taxation, amending charter, L. 1914, ch. 217, § 106.						
1918	632	*All*.....	Employees in the district attorney's office in the county of the Bronx, amending L. 1912, ch. 548, § 3.						
1918	636	*All*.....	Sale of state arsenal lands and buildings in the city of New York, amending L. 1911, ch. 898, §§ 1-5.						
1918	642	*All*.....	Appropriation for deepening channel of Ellicott creek, amending L. 1917, ch. 760, § 1						
1918	644	*All*.....	Office of register of the county of Kings, amending L. 1901, ch. 706, §§ 2, 4, 7, 8.						
1918	645	*All*.....	Retirement of officers and employees of the court of general sessions of the city and county of New York, amending L. 1907, ch. 412, §10 (renumbered 11), § 10 (added).						

The italicised matter following each chapter number indicates the part of such chapter treated as special, private and local in its operation.

Statutes				Amended or otherwise affected by			Expressly repealed by		
Law	**Ch.**	**§**	**Subject and Disposition**	**Law**	**Ch.**	**§**	**Law**	**Ch.**	**§**
1918	646	*All*	City of New York, jurisdiction over ferries, amending charter, L. 1901, ch. 466, § 604 (added).						
1918	647	*All*	Salary of assistant deputy sheriffs in the county of Kings, amending L. 1901, ch. 705, § 2.						
1918	651	*All*	City of New York, police department. amending charter, L. 1901, ch. 466, § 355a (added).						
1918	652	*All*	Increasing the salaries of employees in the district attorney's office of the county of New York.						
1918	653	*All*	Preventing burials near water supply for borough of Brooklyn, amending L. 1868, ch. 591, § 1.						
1918	654	*All*	Police commissioner of the city of New York authorized to rehear the charges upon which George B. Hawthorne was dismissed from the police department.						
1918	656	*All*	Board of supervisors of Sullivan county may fix the annual salary of the county treasurer.						
1918	657	*All*	Court of claims to determine claim of county of Cayuga for reimbursement of moneys paid for road construction.						
1918	658	*All*	City of New York in financing its obligations during the period of the war, may issue corporate stock and serial bonds.						
1918	p. 2097		Alteration of the division line between the town of Woodstock and the town of Hurley, in the county of Ulster.						

INDEX

The supplement contains a record of the special, private and local statutes which have been amended or otherwise affected during the years of 1912 to 1918 inclusive, and also a record of the special, private and local statutes which have been enacted during the period of 1912 to 1918 inclusive, with amendatory and relative acts and explanatory foot notes. The references in the index are to the year and chapter number of the statutes in the supplement.

INDEX

References in the index are to the year and chapter number of the statutes in the supplement.

NAME.	STATUTE.
A	
Actors' Fund of America	L. 1882, ch. 327.
Adam Haveling School Fund	L. 1910, ch. 592.
Adjutant-general, settle claim of Frederick S. Green.	L. 1916, ch. 559
Adjutant-general, hear application of Alice Harvey for pension	L. 1916, ch. 560.
Adjutant-general, hear application of Mary O'Donnell for pension	L. 1916, ch. 561.
Ahern, James, defining employment	L. 1918, ch. 598.
Aird-Don Company, Troy, franchise tax	L. 1915, ch. 721.
Akron, village of	L. 1855, ch. 154.
Albany city:	
Almshouse	L. 1884, ch. 354.
Almshouse farm, sell to county	L. 1912, ch. 10.
Assessment and collection of taxes	L. 1850, ch. 86.
Bethlehem and Watervliet towns, part added to	L. 1870, ch. 139; L. 1871, ch. 727; L. 1880, ch. 333; L. 1917, ch. 402.
City charter	L. 1883, ch. 298; L. 1886, ch. 77; L. 1891, ch. 286.
City boundary lines	L. 1916, ch. 41.
City court	L. 1884, ch. 122; L. 1898, ch. 312; L. 1899, ch. 590; L. 1907, ch. 342; L. 1910, ch. 603.
City court stenographer	L. 1898, ch. 291.
Conduit under waters of Island creek	L. 1914, ch. 142.
Election officers, compensation	L. 1912, ch. 359.
Election of justices	L. 1848, ch. 70.
Exemption of taxes and assessments	L. 1862, ch. 379; L. 1900, ch. 595.
Fees of constables	L. 1836, ch. 437.
Firemen's pension fund	L. 1914, ch. 285.
Firemen's relief fund	L. 1883, ch. 173; L. 1885, ch. 332; L. 1886, ch. 411.
High school property, sell to county	L. 1912, ch. 11.
House of Shelter	L. 1901, ch. 123.
Justice's court	L. 1821, ch. 47; L. 1822, ch. 152; L. 1844, ch. 347; L. 1848, ch. 70; L. 1856, ch. 184; L. 1871, ch. 337; L. 1881, ch. 438; L. 1895, ch. 766.
Monument to General Philip H. Sheridan	L. 1914, ch. 100.
Payment of contractors	L. 1912, ch. 358.
Police pension fund	L. 1899, ch. 554; L. 1914, ch. 285.
Publication of notice of sale of unpaid assessments legalized	L. 1912, ch. 360.
Public park	L. 1915, ch. 374.
River front improvement	L. 1912, ch. 392.
River front improvement	L. 1906, ch. 689.
Salaries of justices	L. 1867, ch. 56.
Smoke nuisance abated	L. 1913, ch. 781.
State armory	L. 1912, ch. 36; L. 1914, ch. 257.
Street improvement	L. 1904, ch. 466.
Taxation uniform	L. 1916, ch. 98.
Ward boundaries	L. 1916, ch. 41.

References in the index are to the year and chapter number of the statutes in the supplement.

NAME.	STATUTE.
Albany city — continued:	
Watervliet town, part added to	L. 1870, ch. 139; L. 1871, ch. 727; L. 1877, ch. 402; L. 1880, ch. 333.
Young Men's Association	L. 1907, ch. 212.
Albany county:	
Boulevard and viaduct	L. 1913, ch. 295.
Charges against county	L. 1884, ch. 368.
Clerk's office, index	L. 1893, ch. 429.
Contracting, regulation of	L. 1884, ch. 368.
Conveyance of lands to Albany Medical College	L. 1916, ch. 57.
Juvenile delinquents, provision for	L. 1902, ch. 261.
Lands sold to State	L. 1916, ch. 266.
Penitentiary grounds conveyed to city of Albany	L. 1916, ch. 401.
Albion, charter	L. 1879, ch. 142.
Alexandria bay, publication fund	L. 1916, ch. 6.
Alfred University, charter	L. 1857, ch. 190.
Alien insane, deportation of	L. 1912, ch. 61.
Allegany Indian reservation, bridge	L. 1913, ch. 363.
Altman Corporation	L. 1913, ch. 149.
American Missionary Association	L. 1862, ch. 358.
American Institute of Architects	L. 1915, ch. 119.
American Power Boat Association	L. 1918, ch. 471.
American Society of Church History, Inc	L. 1916, ch. 82.
Amsterdam, city of	L. 1911, ch. 242.
Andersonville prison monument commission	L. 1913, ch. 413.
Annual appropriation bill	L. 1912, ch. 546; L. 1913, chs. 792, 833, 834; L. 1914, ch. 529; L. 1915, ch. 725; L. 1916, ch. 646; L. 1917, chs. 181, 809; L. 1918, ch. 151; L. 1918, ch. 571.
Annual supply bill	L. 1912, ch. 547; L. 1913, chs. 791, 803; L. 1914, ch. 530; L. 1915. ch. 726; L. 1917, ch. 45; L. 1918, ch. 24.
Antietam battle monument	L. 1916, ch. 637.
Andrew Freedman Home	L. 1916, ch. 27.
Appellate division, appointments, second judicial department	L. 1917, ch. 739.
Appellate division, first department	L. 1911, ch. 855.
Apples, grading and marking	L. 1914, ch. 418.
Appropriations made for deficiencies	L. 1914, ch. 168.
Arkdale, highway bonds legalized	L. 1915, ch. 418.
Armory commission, reconvey lands	L. 1918, ch. 272.
Armories, maintenance and construction	L. 1914, ch. 374; L. 1915, ch. 179.
Assembly seat contests	L. 1917, ch. 569.
Associated Lodges of the Independent Order Brith Abraham of New York City	L. 1915, ch. 256.
Athletic commission	L. 1911, ch. 779.
Attica, village of, water system	L. 1917, ch. 640.
Attorneys, constitutional oath	L. 1918, ch. 263.
Attorney-general's appearance Caroline Palmer proceedings validated	L. 1913, ch. 135.
Auburn city:	
City charter	L. 1906, ch. 185.
Paving	L. 1903, ch. 430; L. 1914, ch. 421.
Public schools	L. 1875, ch. 577; L. 1888, ch. 381; L. 1914, ch. 286.
Water supply	L. 1894, ch. 36.

References in the index are to the year and chapter number of the statutes in the supplement.

NAME.	STATUTE.
Auburn Orphan Asylum	L. 1887, ch. 404; L. 1917, chs. 417, 461.
Auburn Theological Seminary	L. 1906, ch. 56.
Aurora, town bonds legalized	L. 1916, ch. 15.
Auto trucks for military use	L. 1916, ch. 39.
Ava, town of, cemetery property conveyed	L. 1918, ch. 367.
B	
Baldwinsville union free school district	L. 1864, ch. 94; L. 1885, ch. 21; L. 1916, ch. 186.
Ballston Springs, village of	L. 1855, ch. 356.
Banking law revision commission	L. 1913, ch. 705.
Baptist Missionary Convention	L. 1898, ch. 143.
Barge canal act	L. 1903, ch. 147.
Barge canal bond	L. 1910, ch. 66.
Barge canal dedication commission	L. 1918, ch. 344.
Barge canal operation commission	L. 1912, ch. 9.
Barge canal terminals	L. 1911, ch. 746; L. 1913, ch. 787; L. 1915, ch. 477.
Barrett, William G., claim of	L. 1915, ch. 186.
Barton, town of, vote legalized	L. 1915, ch. 80.
Batavia city	L. 1914, ch. 354.
Batavia village	L. 1853, ch. 140; L. 1884, ch. 195.
Bath village	L. 1895, ch. 785.
Bath Beach Hebrew Free Loan Association	L. 1913, ch. 700.
Battlefields of Gettysburg, Chattanooga and Antietam	L. 1918, ch. 345.
Battlefield of Knoxville, monument dedication	L. 1918, ch. 345.
Bean production in the state, investigation of	L. 1917, ch. 306.
Becker, Philip, reimbursement	L. 1915, ch. 698.
Bedford Street Methodist Church of New York City	L. 1914, ch. 138.
Bedford, town line altered	L. 1916, p. 2505,
Beekmantown, state lands for military purposes	L. 1917, ch. 384.
Bell, Alfred D., assembly seat contest	L. 1916, ch. 627.
Belmont town, taxes	L. 1915, ch. 191.
Bennington battlefield, preservation of	L. 1913, ch. 716.
Bennington, town of, bridge bonds legalized	L. 1917, ch. 17.
Binghamton, city of	L. 1907, ch. 751; L. 1917, ch. 668.
Binghamton city, dike wall in Chenango river	L. 1914, ch. 406.
Binghamton city, firemen's pension fund	L. 1912, ch. 403.
Binghamton city, incorporating fire department	L. 1869, ch. 294.
Bishop, Geo. W., restored to national guard	L. 1915, ch. 416.
Blanvelt Rifle Range	L. 1909, ch. 188; L. 1913, ch. 420.
Black River canal	L. 1918, ch. 564.
Black river, plans for improvement	L. 1913, ch. 703.
Board of claims, expert witnesses and counsel fees, claims	L. 1912, ch. 274.
Board of statutory consolidation	L. 1904, ch. 664; L. 1912, ch. 393; L. 1913, ch. 713.
Board of Home Missions of the Presbyterian Church in United States of America	L. 1872, ch. 287.
Board of Managers of the Diocesan Missionary and Church Extension Society of the Protestant Episcopal Church in the Diocese of New York	L. 1915, ch. 153.

NAME.	STATUTE.
Board of Trustees of Foreign Parishes of the Protestant Episcopal Church in the United States of America	L. 1913, ch. 268.
Board of Trustees of St. James' American Protestant Episcopal Church, Florence, Italy	L. 1909, ch. 211.
Bolton town, removal of bodies from Edmund cemetery	L. 1913, ch. 380.
Bonds:	
Barge canal	L. 1906, ch. 302; L. 1910, ch. 66.
Canal terminals	L. 1911, ch. 746.
Cayuga and Seneca canals	L. 1895, ch. 79; L. 1909, ch. 391; L. 1910, ch. 139.
Erie, Oswego and Champlain canals	L. 1903, ch. 147; L. 1906, ch. 302; L. 1913, ch. 787; L. 1915, ch. 570.
Fifty millions in bonds for highways	L. 1912, ch. 298.
Highway improvement	L. 1906, ch. 469; L. 1907, ch. 718.
Palisades interstate park	L. 1910, ch. 363; L. 1916, ch. 569.
Rate of interest upon certain bonds	L. 1913, ch. 787.
State park	L. 1916, ch. 569.
Books and apparatus for schools, purchase of	L. 1916, ch. 387.
Bridge across South bay	L. 1914, ch. 255.
Brighton town, disability of supervisor	L. 1915, ch. 481.
Brighton, town, sidewalk districts	L. 1917, ch. 190.
Brick Church Cemetery Association of East Whitehall	L. 1918, ch. 441.
Brockport, village of	L. 1852, ch. 180.
Bronx county:	
Commissioner of records	L. 1918, ch. 90; L. 1918, ch. 299.
Indexing	L. 1893, ch. 536.
Erection of	L. 1912, ch. 548.
Fees of clerk	L. 1915, ch. 353.
Grade crossings	L. 1913, ch. 771.
Physicians and surgeons	L. 1915, ch. 302.
Transferring records from New York county	L. 1913, ch. 837.
Bronx river, preserving waters	L. 1907, ch. 594.
Bronx valley sanitary sewer district	L. 1905, ch. 646; L. 1915, ch. 425; L. 1917, ch. 646.
Brookhaven town, election legalized	L. 1916, ch. 48.
Brooklyn:	
Children's museum building	L. 1907, ch. 120.
Elevated railways, Adams street	L. 1896, ch. 372.
Fourth avenue improvement	L. 1861, ch. 299.
Grade crossings	L. 1903, ch. 507.
Preventing burials near water supply	L. 1868, ch. 591.
Reformation of females	L. 1892, ch. 439.
Broome County Humane Society and Relief Association	L. 1916, ch. 66.
Broome county treasurer's office	L. 1902, ch. 22.
Bryn Mawr Union Church, deed legalized	L. 1912, ch. 180.
Buckhorn Association	L. 1916, ch. 188.
Buffalo:	
Boat house erected for naval militia	L. 1912, ch. 160.
Bond issue	L. 1909, ch. 295.
Bond issue, insurance fund	L. 1913, ch. 297.
Cemeteries	L. 1881, ch. 345.
City charter	L. 1891, ch. 105; L. 1914, ch. 217.
City court	L. 1909, ch. 570.

NAME.	STATUTE.
Buffalo — continued:	
Department of Public Instruction	L. 1905, ch. 109.
Gift of site for state buildings	L. 1914, ch. 429.
Grade crossings	L. 1888, ch. 345; L. 1903, ch. 552.
Grosvenor library	L. 1859, ch. 239.
Hamburg turnpike contracts	L. 1911, ch. 442.
Henry A. Richmond Trust Fund	L. 1914, ch. 231.
Improvements along Scavaquada creek	L. 1913, ch. 343.
International Railway Company	L. 1903, ch. 637.
Jubilee water system	L. 1898, ch. 76.
Lease certain lands	L. 1913, ch. 56.
Municipal hospital	L. 1909, ch. 115.
Naval militia boat house	L. 1912, ch. 160.
Park commissioners' control over Kenilworth ave.	L. 1913, ch. 65.
Railroad crossings	L. 1888, ch. 345.
Railway terminal station commission	L. 1911, ch. 842.
Removal of remains from Delaware Ave. cemetery.	L. 1913, ch. 612.
Repaving Chippewa and Georgia streets	L. 1915, ch. 450.
Sinking fund water bonds	L. 1912, ch. 281.
State armory	L. 1913, ch. 312.
Street purposes, land ceded by state	L. 1915, ch. 462.
Trunk sewer bonds	L. 1912, ch. 373.
Tuberculosis hospital	L. 1909, ch. 115: L. 1910, ch. 26.
Waterworks system	L. 1903, ch. 240; L. 1911, ch. 76; L. 1912, chs. 281, 381.
Buffalo city and Erie county, transfer of city and county hall	L. 1913, ch. 114.
Buffalo Cooperative Brewing Company	L. 1887, ch. 360.
Buffalo Fine Arts academy	L. 1902, ch. 526.
Buffalo Frontier Terminal Railroad Company	L. 1914, ch. 490.
Buffalo, Hamburg turnpike contracts	L. 1911, ch. 442; L. 1913, ch. 616.
Buffalo and Niagara Boulevard, preventing flooding of	L. 1913, ch. 729.
Buffalo and Susquehanna Railroad Companies	L. 1912, ch. 240.
Buffalo State Normal School	L. 1910, ch. 520; L. 1912, ch. 14; L. 1913, ch. 186; L. 1915, ch. 712.
Butter and egg investigation	L. 1916, ch. 641.

C

NAME.	STATUTE.
Cairo town, unpaid taxes	L. 1918, ch. 72.
Cambridge, village of	L. 1880, ch. 402.
Cameron town, building	L. 1914, ch. 415.
Canisteo river, dredging of	L. 1913, ch. 750.
Canals:	
Abandoned canal lands conveyed to the United States	L. 1918, ch. 1.
Appraisal of lands, structures and waters	L. 1908, ch. 195.
Approaches to bridge over Erie canal at Yorkville.	L. 1917, ch. 752.
Black river	L. 1918, ch. 564.
Black river and Moose river bridge	L. 1915, ch. 699.
Bonds	L. 1906, ch. 302; L. 1909, ch. 391; L. 1910, chs. 66, 139; L. 1913, ch. 787; L. 1915, ch. 570.
Bridge at Waterloo	L. 1915, ch. 701.
Bridge at Whitesboro	L. 1915, ch. 704.
Bridge at Minetto	L. 1915, ch. 716.
Bridge in city of Geneva	L. 1918, ch. 351.

NAME.	STATUTE.
Canals — continued:	
Bridge over Black River canal	L. 1912, ch. 53.
Bridge over Black River canal at Lyons Falls	L. 1912, ch. 510.
Bridge over Black River and Moose River	L. 1913, ch. 246.
Bridge over Black River canal in city of Rome	L. 1917, ch. 753.
Bridge over Erie canal in city of Cohoes	L. 1912, ch. 488.
Bridge over Erie canal in city of Buffalo	L. 1917, ch. 761.
Bridge over Erie canal in city of Rome	L. 1913, ch. 735.
Bridge over Erie canal in village of Yorkville	L. 1913, ch. 745.
Bridge over Mohawk river	L. 1916, ch. 603; L. 1907, ch. 742.
Bridges, removal of	L. 1915, ch. 702.
Canal basin in city of Albany	L. 1914, ch. 263.
Canal land appraiser	L. 1908, ch. 195.
Canal debt, appropriations	L. 1912, chs. 110, 113, 115, 116; L. 1913, chs. 805, 806; L. 1914, chs. 174, 176, 525; L. 1915, chs. 585, 694, 697; L. 1916, chs. 8, 628, 642, 646; L. 1917, chs. 181, 237, 764; L. 1918, chs. 151, 353.
Canal improvement	L. 1912, chs. 82, 320; L. 1914, ch. 91; L. 1915, ch. 237; L. 1916, ch. 8.
Canal wall feeder at Oneida	L. 1915, ch. 705.
Cayuga and Seneca	L. 1909, ch. 391; L. 1910, ch. 139; L. 1912, ch. 320; L. 1913, chs. 365, 787; L. 1914, ch. 179; L. 1915, chs. 691, 692; L. 1918, ch. 28.
Champlain canal, portion retained for navigation	L. 1914, ch. 412.
Commissioners of land office grant land under water	L. 1913, ch. 66.
Compensation for property appropriated	L. 1913, ch. 708.
Damaged by flood, barge canal	L. 1913, chs. 515, 516.
Damages for appropriation of land	L. 1915, ch. 640.
Dive culverts at Rome	L. 1918, ch. 346.
Drain in city of Lockport	L. 1912, ch. 397.
Drain under Erie canal in city of Lockport	L. 1914, ch. 370.
Erie, Oswego and Champlain	L. 1903, ch. 147; L. 1906, ch. 302; L. 1910, ch. 66; L. 1913, chs. 243, 706, 787; L. 1914, ch. 194; L. 1915, chs. 693, 695, 696, 706; L. 1916, chs. 8, 628.
Extension of barge canal from Auburn to Port Byron	L. 1917, ch. 376.
Foot bridge at Seneca Falls	L. 1915, ch. 700.
Foot bridge in city of Utica	L. 1913, ch. 711.
Gate construction in locks	L. 1914, ch. 145.
Highway bridge at Scotia	L. 1915, ch. 703.
Highway bridge over Mohawk river	L. 1913, ch. 714.
Hoist bridge in city of Syracuse	L. 1909, ch. 453; L. 1913, ch. 715.
Improvement of canals	L. 1911, ch. 214.
Interest rate on bonds	L. 1913, ch. 787.
Lock tenders, increased wages	L. 1912, ch. 506.
Long Island canal	L. 1917, ch. 317.
Maps and surveys	L. 1910, ch. 199; L. 1912, ch. 511; L. 1913, ch. 220, 290.
Mechanical and other structures	L. 1912, ch. 47; L. 1913, ch. 261; L. 1914, chs. 143, 144; L. 1915, chs. 237, 708.
Mohawk river bridge	L. 1916, ch. 603; L. 1917, ch. 742.

NAME.	STATUTE.
Canals — continued:	
Oswego canal	L. 1911, chs. 214, 227; L. 1913, ch. 242; L. 1914, ch. 86.
Oriskany Creek feeder	L. 1910, ch. 518.
Ship canal on Long Island	L. 1915, ch. 461; L. 1918, ch. 588.
Surveys and maps	L. 1914, ch. 523.
Terminals and facilities	L. 1911, ch. 746; L. 1912, ch. 322; L. 1913, chs. 244, 358; L. 1914, ch. 178; L. 1918, chs. 340, 555, 592.
Terminals sinking fund	L. 1911, ch. 746; L. 1913, ch. 787; L. 1915, ch. 477.
Towing facilities	L. 1914, ch. 248; L. 1915, ch. 283; L. 1916, ch. 255; L. 1917, ch. 237.
Canandaigua city charter	L. 1913, ch. 371.
Canandaigua lake, deepening harbor channel	L. 1917, ch. 756.
Canandaigua village charter	L. 1893, ch. 666.
Canton, village of	L. 1886, ch. 363.
Canterbury fire company	L. 1830, ch. 272.
Capitol reconstruction	L. 1911, ch. 853; L. 1912, ch. 517; L. 1913, ch. 549; L. 1915, ch. 336.
Carnegie Corporation of New York	L. 1911, ch. 297.
Carr, William J., deceased, salary paid to heirs	L. 1918, chs. 545, 548.
Catholic Charities' Aid Association	L. 1917, ch. 256.
Catskill, village of	L. 1860, ch. 68.
Cattaraugus county clerk's office	L. 1891, ch. 281.
Cayuga county, collection of taxes	L. 1882, ch. 133; L. 1885, ch. 161; L. 1901, ch. 655.
Cayuga county, judge and surrogate	L. 1849, ch. 306.
Cayuga nation of Indians, annuities	L. 1913, ch. 778.
Cayuga nation of Indians, claims of	L. 1909, ch. 255.
Census and military resources of the state	L. 1917, chs. 103, 409.
Central Land Company of Niagara Falls	L. 1914, ch. 26.
Chamberlain Institute	L. 1866, ch. 517; L. 1917, ch. 314.
Chamberlain and Sanford Railroad Company	L. 1912, ch. 228.
Charlotte, village of	L. 1869, ch. 443.
Chattanooga Battlefield Commission	L. 1895, ch. 317.
Charters of certain corporations annulled	L. 1918, ch. 406.
Chautauqua county, Bemus Point fish hatchery	L. 1917, ch. 767.
Chautauqua county clerk	L. 1890, ch. 547.
Chautauqua county court, jurisdiction	L. 1918, ch. 464.
Chautauqua county, judge and surrogate	L. 1849, ch. 306.
Chautauqua county, tuberculosis hospital	L. 1914, ch. 147.
Chautauqua lake outlet, dredging	L. 1913, ch. 758.
Chazy town, ferry	L. 1915, ch. 71.
Chenango county, tuberculosis hospital bonds	L. 1917, ch. 87.
Chemung river at Corning, removal of island	L. 1913, ch. 732.
Children's Aid Society, Rochester	L. 1895, ch. 355.
Christ's Church of Hudson, endowment fund	L. 1902, ch. 330.
Christ's Church, Lockport, permanent fund	L. 1912, ch. 201.
Christ's Church, Rochester, endowment fund	L. 1913, ch. 283.
Church Extension Society of Rochester	L. 1914, ch. 35.
Church Insurance Association	L. 1891, ch. 134.
Church of St. John on Cat Rock road, sell real estate.	L. 1918, ch. 66.
Church Peace Union	L. 1915, ch. 407.
Church Pension Fund	L. 1914, ch. 97; L. 1915, ch. 239.
Churchville, village of	L. 1867, ch. 941.

NAME.	STATUTE.
Cities of first class, deposits for restoration of pavements	L. 1913, ch. 788.
Cities, simplified form of government	L. 1914, ch. 444.
City local option elections	L. 1918, ch. 178.
Civil lists, investigation of	L. 1916, ch. 1.
Civil service, employees restored	L. 1915, ch. 550.
Civil service, investigation of	L. 1916, ch. 630.
Claim for damages, automobile accident, State Fair Grounds	L. 1915, ch. 657.
Claim of Emma I. Hood	L. 1913, ch. 404.
Claim of John J. Munroe at King's Park State hospital	L. 1915, ch. 658.
Claim of Frederick S. Greene	L. 1916, ch. 559.
Claim of Long Sault Development Co.	L. 1913, ch. 453.
Claims of state against United Surety Co. settled	L. 1915, ch. 656.
Claims of state against People's Surety Company settled	L. 1915, ch. 659.
Claims of state against Bankers' Surety Co. settled.	L. 1915, ch. 661.
Claims on account of canal construction	L. 1915, ch. 640.
Cliff Electrical Distributing Company, consolidation.	L. 1918, chs. 596, 597.
Clifton town, assessment state lands	L. 1917, ch. 533.
Clifton town, taxes	L. 1915, ch. 180.
Clinton prison, drainage canal	L. 1918, ch. 554.
Cobleskill, village of	L. 1868, ch. 136.
Coeymans town, pay over moneys	L. 1916, ch. 49.
Cohoes, city of	L. 1892, ch. 671; L. 1915, ch. 130.
Cohoes city, sewers	L. 1912, ch. 259.
College of Pharmacy of City of New York	L. 1884, ch. 424.
Collins, Cornelius V., appropriation for compensating.	L. 1917, ch. 144.
Columbia county, bond issue	L. 1912, ch. 150.
Commission:	
Barge canal dedication	L. 1918, ch. 344.
Barge canal operation	L. 1912, ch. 9.
Chattanooga battlefield	L. 1895, ch. 317.
Compensation paid by United States to members of national guard, inquiry	L. 1917, ch. 497.
Federal legislation for alien insane	L. 1914, ch. 7.
Freight rate proceedings by New Jersey committee	L. 1917, ch. 313.
Investigate construction of highway bridge over Mohawk river	L. 1916, ch. 603.
Investigate housing of people in cities of second class	L. 1914, ch. 313.
Investigate manufacture in cities	L. 1913, ch. 137; L. 1914, ch. 110.
Investigate production and distribution of food	L. 1911, ch. 787.
Investigate purchasing supplies for state departments	L. 1917, ch. 142.
Investigate provisions for mentally deficient	L. 1914, ch. 272.
Investigate port conditions at New York	L. 1917, ch. 426; L. 1918, ch. 201.
Investigate surface railroad conditions in New York city	L. 1917, ch. 720.
Improving condition of the blind	L. 1913, ch. 415.
Military training appropriations	L. 1917, ch. 217.
New prisons	L. 1910, ch. 365; L. 1916, ch. 594.
Sites, grounds and buildings	L. 1913, ch. 625.
State and federal taxation	L. 1917, ch. 133.
Transfer quarantine establishment to U. S.	L. 1916, ch. 342.
Widowed mothers pension inquiry	L. 1913, ch. 588.

References in the index are to the year and chapter number of the statutes in the supplement.

NAME.	STATUTE.
Commissioner of agriculture distribute appropriations	L. 1918, ch. 350.
Commissioner of charities and correction of county of Erie	L. 1913, ch. 293.
Commissioner of deeds, acts legalized	L. 1912, ch. 78; L. 1913, ch. 95; L. 1914, ch. 99; L. 1915, ch. 99; L. 1916, ch. 280; L. 1917, ch. 436; L. 1918, ch. 410.
Commissioner of education apportion certain funds.	L. 1914, ch. 114.
Commission of efficiency and economy to report on cost of free text books in schools	L. 1913, ch. 767.
Commissioners of jurors	L. 1895, ch. 369.
Commissioners of jurors in certain counties	L. 1894, ch. 557; L. 1901, ch. 602.
Commissioner of jurors in several counties	L. 1899, ch. 441.
Commissioners of land office:	
Cede to United States lands in city of Syracuse..	L. 1917, ch. 437.
Convey abandoned canal land to United States...	L. 1918, ch. 1.
Convey Sing Sing prison lands in Westchester county	L. 1915, ch. 507.
Exchange land with Western New York and Penn. Railway Co	L. 1899, ch. 592.
Grant to city of New York lands of Eastchester creek	L. 1916, ch. 509.
Grant to city of New York lands at Hunt's Point.	L. 1916, ch. 499.
Grant to village of Tarrytown lands for public park	L. 1916, ch. 22.
Quit claim land to De Laval Separator Co	L. 1918, ch. 529.
Sell lands in Chautauqua county	L. 1915, ch. 526.
Utica city, sell lands in	L. 1915, ch. 344.
Warsaw village, sell lands in	L. 1915, ch. 88.
Commissioners of the home of city and town of Newburgh	L. 1913, ch. 224.
Commissioners revise laws relating to estates of deceased persons	L. 1913, ch. 37; L. 1915, ch. 451; L. 1916, ch. 400.
Commissioners on uniformity of legislation	L. 1917, ch. 738.
Commonwealth Weekly Publishing Co	L. 1918, ch. 594.
Committee of Reference and Counsel of Foreign Missions Conference of North America	L. 1917, ch. 699.
Compensation law, re-enacting certain provisions...	L. 1918, ch. 249.
Compulsory education law suspended, employment of children	L. 1917, ch. 689.
Concord society of Strykersville	L. 1887, ch. 523; L. 1914, ch. 407.
Congregational Church of Cambridge	L. 1912, ch. 181.
Congregation Makower of Poland	L. 1912, ch. 316.
Congressional districts	L. 1911, ch. 890; L. 1915, ch. 340; L. 1918, ch. 250.
Conrad Poppenhusen Association	L. 1868, ch. 667.
Conservation commission, publish flow of Black river	L. 1914, ch. 321.
Conservation law, enforcing fire provisions	L. 1916, ch. 35.
Constitutional amendments, publication of	L. 1915, ch. 668.
Constitutional convention	L. 1913, ch. 819; L. 1914, ch. 261; L. 1915, chs. 76, 201, 338, 624, 668.
Contracts for construction of public works	L. 1918, ch. 585.
Control of diseases	L. 1915, ch. 165.
Cooperstown, village of	L. 1889, ch. 511.
Copernicus Educational Aid Association	L. 1914, ch. 136.

References in the index are to the year and chapter number of the statutes

NAME.	STAT
Cornell University, pay legal fees and expenses....	L. 1914, ch. 42.
Cornell University, drill hall	L. 1914, ch. 237;
Cornell University, scholarships after the war......	L. 1918, ch. 76.
Cornell University state college of agriculture......	L. 1904, ch. 655;
Corning, city of	L. 1905, ch. 142.
Corning, education	L. 1858, ch. 298; L. 1868, ch. 312.
Cornwall town, sidewalk districts................	L. 1917, ch. 408.
Corporations may co-operate with other corporations.	L. 1918, ch. 240.
Cortland, city of	L. 1900, ch. 160; L. 1903, ch. 295
Cortland city, assessments levied against the state..	L. 1917, ch. 748.
Cortland state normal school......................	L. 1918, ch. 553.
Cortlandt town, appropriation to Helping Hand Association	L. 1905, ch. 263.
Cortlandt town, school district bonds..............	L. 1912, ch. 39.
Council of Jewish women	L. 1915, ch. 419.
Council of Young Men's Hebrew and Kindred Association	L. 1914, ch. 74.
County judge and surrogate, certain counties.......	L. 1849, ch. 306.
County farm bureaus	L. 1913, ch. 712.
County roads, certain counties	L. 1910, ch. 564.
County roads, improvement of....................	L. 1911, ch. 137.
Court of claims:	
Babcock, Dudley P..............................	L. 1918, ch. 608.
Briggs, Casper A...............................	L. 1918, ch. 613.
Butterfield, Fred R..............................	L. 1918, ch. 605.
Canals and terminals	L. 1918, ch. 606.
Canal bridges and terminals....................	L. 1918, ch. 612.
Cayuga county	L. 1918, ch. 657.
Cooper-Snell Company	L. 1918, ch. 603.
Damages on account of canal construction........	L. 1915, ch. 640.
Death of Julius Lewis..........................	L. 1918, ch. 611.
Gleason, Mary	L. 1918, ch. 614.
Moffat, Vincent	L. 1918, ch. 609.
Overflow of Mohawk river......................	L. 1918, ch. 604.
Public contracts	L. 1918, ch. 607.
Rhodney and Clawson	L. 1918, ch. 610.
Cowasselon creek, dredging	L. 1917, ch. 781.
Cowen, Fred, real estate released to..............	L. 1916, ch. 418.
Crown Point, ferry across Lake Champlain........	L. 1915, ch. 142.
Cuba reservoir	L. 1913, ch. 738.
Cuba village, prevention of floods..................	L. 1918, ch. 565.

D

Dannemora village, sale of electric current to.......	L. 1916, ch. 362.
Dansville village, route number 15................	L. 1912, ch. 473.
Deaf-Mutes in certain institutions, instruction of....	L. 1917, ch. 745.
Deerfield town, part annexed to Utica..............	L. 1913, ch. 518.
Deerpark town, union free school district...........	L. 1866, ch. 579; L. 1880, ch. 52
Defining employment of James Ahern.............	L. 1918, ch. 598.
Defining employment of Daniel McCarthy..........	L. 1917, ch. 33.
Defining employment of George Ploeser............	L. 1918, ch. 599.
Delany, John J., late justice supreme court, compensation	L. 1916, ch. 197.

References in the index are to the year and chapter number of the statutes in the supplement.

NAME. — **STATUTE.**

Delaware county boundary line ..... L. 1918, ch. 559.
Delhi state agricultural school, appro ..... L. 1913, ch. 675; L. 1915, ch. 727.
De Laval Separator Company, take lands under water L. 1918, ch. 529.
Department of efficiency and economy ..... L. 1913, ch. 280.
Deposit, village of ..... L. 1873, ch. 330; L. 1914, ch. 12.
De Veaux College for Orphans and Destitute Children ..... L. 1853. ch. 243.
Dillon, Margaret E., pension ..... L. 1915, ch. 96.
Diocesan Missionary and Church Extension Society of the Protestant Episcopal Church in the Diocese of New York ..... L. 1912, ch. 153.
Diocesan Missions of Long Island ..... L. 1902, ch. 394.
Direct tax levied ..... L. 1912, ch. 209; L. 1913, ch. 804; L. 1915, ch. 729; L. 1917, ch. 762; L. 1918, ch. 368.
Dogs ..... L. 1918, ch. 55.
Donahue, William H., chief factory inspector ..... L. 1918, ch. 347.
Domestic animal diseases ..... L. 1912, ch. 512; L. 1915, ch. 165.
Dryden town, appropriation for school district ..... L. 1918, ch. 245.
Dunkirk, annual town and city election ..... L. 1899, ch. 40.
Dunkirk city charter ..... L. 1909, ch. 538.
Dunkirk, fish hatchery ..... L. 1916, ch. 632; L. 1917, ch. 759.
Dunkirk, lands redeemed from tax sales ..... L. 1918, ch. 528.
Dunkirk, new school building ..... L. 1916, ch. 293.
Dunkirk town, changing election districts legalized.. L. 1895, ch. 189.
Dutchess county:
  Child's welfare board ..... L. 1917, ch. 354.
  Complete enrollment in election districts ..... L. 1917, ch. 62.
  County clerk's office, fees ..... L. 1915, ch. 303.
  Hyde Park fire department ..... L. 1860, ch. 257.
  New State route ..... L. 1918, ch. 391.
  School tax in towns of Hyde Park and Poughkeepsie ..... L. 1907, ch. 315.
  Unpaid taxes ..... L. 1883, ch. 263.

E

East Aurora, bond issue for streets ..... L. 1918, ch. 220.
East Bloomfield village, incorporation legalized ..... L. 1917, ch. 784.
East River bridge ..... L. 1900, ch. 752.
East Rochester, legalizing bond issue for paving.... L. 1916, ch. 227.
East Rochester, paving ..... L. 1915, ch. 81; L. 1917, chs. 273, 291.
East Rochester, storm water sewer ..... L. 1917, ch. 274.
East Rochester, water mains ..... L. 1917, ch. 272.
Eastchester bay and creek, release of lands under... L. 1916, ch. 509.
Eastchester, bond issue for fire apparatus ..... L. 1916, chs. 33, 34.
Eastchester, bond issue for fire engine ..... L. 1912, ch. 28.
Eastchester, town purchase motor fire truck ..... L. 1913, ch. 382.
Eastchester, trustees of public lands ..... L. 1846, ch. 185.
Eastern association school ..... L. 1913, ch. 634.
Eastern Star Hall and Home ..... L. 1905, ch. 159.
Education department, money expended ..... L. 1914, ch. 193.
Eel Weir park, incorporation of superintendents ..... L. 1911, ch. 236.
Efficiency and economy department ..... L. 1913, ch. 280.
Eighteen Mile creek culvert ..... L. 1917, ch. 626.
Eighteen Mile creek survey ..... L. 1918, ch. 425.

References in the index are to the year and chapter number of the statutes in

NAME.	STAT
Electric City Railway Company	L. 1914, ch. 2.
Ellicott creek improvement	L. 1913, ch. 624; L. 1918, ch. 85.
Ellicott town, union free school district	L. 1877, ch. 441.
Ellicottville, village of	L. 1837, ch. 139.
Elmira:	
Banks of Chemung river repaired	L. 1913, ch. 718.
City charter	L. 1906, ch. 477.
Elevator in armory	L. 1911, ch. 19.
Police pension fund	L. 1900, ch. 525.
Public schools	L. 1895, ch. 370.
Water department	L. 1913, ch. 660.
Emancipation proclamation commission	L. 1913, ch. 532.
Emmett, William T., appropriation for salary	L. 1918, ch. 261.
Employees at state hospitals, compensation for extra services	L. 1917, ch. 740.
Employees, increased compensation	L. 1918, ch. 556.
Enterprise Land Company	L. 1911, ch. 289.
Enumeration in towns and cities	L. 1918, ch. 392.
Enumeration of the inhabitants of the state, appro.	L. 1915, ch. 260.
Erie canal, lift bridge at Syracuse	L. 1909, ch. 453.
Erie, Oswego and Champlain canals, improvement	L. 1903, ch. 147.
Erie county, commissioner of charities	L. 1913, ch. 293.
Erie county, county treasurer	L. 1883, ch. 496.
Erie county, purchasing department	L. 1917, ch. 167.
Essex and Hamilton counties, dividing line	L. 1915, ch. 718.
Executive department indebtedness	L. 1913, ch. 831.
Exempt Firemen's Benevolent Association of City of Yonkers	L. 1912, ch. 308.
Expenses under agricultural law relating to dogs	L. 1918, ch. 55.

F

Factory investigating commission	L. 1911, ch. 561.
Fairlawn Cemetery Society of Mount Pleasant	L. 1917, ch. 239.
Fairport village charter	L. 1867, ch. 330;
Fairport village, bonds	L. 1917, ch. 439.
Fallsburgh, town of, certificates of indebtedness legalized	L. 1917, ch. 67.
Farm names recorded	L. 1912, ch. 145.
Farm sites for hygiene and anti-toxin laboratories	L. 1913, ch. 657.
Federation of the Councils of the Boy Scouts of America in the city of New York	L. 1917, ch. 554.
Federation for the Support of Jewish Philanthropic Societies of New York City	L. 1917, ch. 269.
Firemen's Benevolent Fund Association of New Rochelle	L. 1903, ch. 485.
Fire or Marine Insurance Corporation	L. 1899, ch. 85.
Firemen's Association of State of New York	L. 1873, ch. 434.
First Presbyterian Church of Jeffersonville	L. 1913, ch. 667.
First Presbyterian Union Church of Owego	L. 1915, ch. 251.
First Reformed Protestant Dutch Church of Chatham	L. 1915, ch. 210.
Fishkill Landing, village of	L. 1913, ch. 539.
Fishkill Landing, bonds legalized	L. 1912, ch. 5.
Fishkill town, support of poor	L. 1857, ch. 89.
Ferry across Lake Champlain	L. 1907, ch. 392;

NAME.	STATUTE.
Flower hospital, New York city	L. 1869, ch. 191.
Flushing bay and creek, grant of lands to New York city	L. 1913, ch. 62.
Fonda, Johnstown and Gloversville Railroad Co., franchise taxes	L. 1915, ch. 262.
Food Investigating Commission	L. 1911, ch. 787.
Food Supply Commission	L. 1917, chs. 205, 813.
Foresters of America	L. 1895, ch. 106.
Forestry bureau	L. 1916, ch. 45.
Forests protected from fire	L. 1913, ch. 311.
Fort Ann town, lands for prison purposes	L. 1914, ch. 184.
Frankfort, village of	L. 1863, ch. 396.
Frankfort village, collector abolished	L. 1915, ch. 406.
Franklin county, bond issue for highways	L. 1913, ch. 650.
Franklin county, boundary line	L. 1913, ch. 385.
Franklin county, road system	L. 1911, ch. 137.
Franklin county, sheriff's office	L. 1902, ch. 29.
Franklin county, unpaid taxes	L. 1912, ch. 243; L. 1918, ch. 155.
Franklin town, unpaid taxes	L. 1914, ch. 57.
Franklinville, public park	L. 1915, ch. 70.
Fredonia village charter	L. 1894, ch. 480.
Freedom, town of	L. 1917, ch. 89.
Frontier and Western Railway Company	L. 1914, ch. 411.
Frontier Electric Railway Company	L. 1911, ch. 523; L. 1914, ch. 411; L. 1917, ch. 539.
Fulner creek improvement	L. 1915, ch. 709.
Fulton city charter	L. 1902, ch. 63.
Fulton monument	L. 1907, ch. 676.

G

NAME.	STATUTE.
Game farm in Jefferson county	L. 1914, ch. 259.
Game preserve in Oswego county	L. 1918, ch. 286.
Gardner town, bond issue	L. 1917, ch. 59.
General Board of Education of the Presbyterian Church in the United States of America	L. 1917, ch. 495.
General Board of Religious Education	L. 1918, ch. 163.
General Clergy Relief Fund	L. 1855, ch. 459; L. 1915, ch. 239.
General Sunday School Association of the Universalist Church	L. 1914, ch. 127.
General Theological Seminary of Protestant Episcopal Church in United States	L. 1822, ch. 150.
Genesee Falls town, assessment of state lands	L. 1914, ch. 88.
Genesee Falls town, legalizing bond issue for bridge.	L. 1917, ch. 16.
Geneva city, charter	L. 1897, ch. 360.
Geneva classical and union school district	L. 1870, ch. 9.
German American Brewing Company of Buffalo	L. 1913, ch. 271.
Geological hall in city of Albany, sale of	L. 1912, ch. 441.
German Flatts town, school district bonds	L. 1913, ch. 578.
German Flatts town, unpaid taxes	L. 1912, ch. 256.
German language and history annulled	L. 1918, ch. 406.
Gettysburg battlefield commission	L. 1895, ch. 317.
Gettysburg, Chattanooga and Antietam monuments.	L. 1913, ch. 550.
Gettysburg fiftieth anniversary	L. 1912, chs. 144, 227; L. 1913, ch. 725.
Glen Cove charter	L. 1917, ch. 787.
Glens Falls city charter	L. 1908, ch. 29.
Glen and Mill creek improvement	L. 1918, ch. 341.
Glenside Cemetery Association of New York Mills	L. 1912, ch. 302.

NAME.	STATUTE.
Glenville town, release Freeman's bridge	L. 1916, ch. 68.
Gloversville city charter	L. 1899, ch. 275.
Gloversville city, bond issue for highways	L. 1914, ch. 430.
Goshen, draining and altering Rio Grande	L. 1869, ch. 419.
Gowanda state hospital, payment of employees	L. 1914, ch. 146.
Gowanda village, bond issue for improving streets	L. 1916, ch. 101.
Grade crossings in Brooklyn, abolishment of	L. 1903, ch. 507.
Granby town, lands accepted by state for public park	L. 1916, ch. 308.
Grand Court of State of New York of the Ancient Order of Foresters of America	L. 1895, ch. 106.
Grand Lodge of the Independent Order of Odd Fellows	L. 1918, ch. 226.
Gravesend, 86th street, Kings county	L. 1873, ch. 364.
Great Meadow prison	L. 1914, ch. 184; L. 1915, ch. 442.
Greece town, water system	L. 1915, ch. 34.
Greeley, Horace, monument unveiling report	L. 1913, ch. 643.
Green Island, municipal lighting plant	L. 1901, ch. 623.
Green Island, policemen	L. 1871, ch. 637.
Greene county:	
Boundary line	L. 1913, ch. 760.
Clerk's office	L. 1900, ch. 161.
Equalization board	L. 1904, ch. 152.
New state route, appropriation	L. 1914, ch. 68.
Greenwich village, bond issue legalized	L. 1916, ch. 356.
Griffin creek, clearing of	L. 1918, ch. 565.
Grimes Foundation	L. 1916, ch. 352.
Grove Place cemetery, Chili	L. 1915, ch. 110.
Guinard, William A., claim of	L. 1915, ch. 186.
Guy Park house, building and grounds in city of Amsterdam	L. 1917, ch. 316.

H

NAME.	STATUTE.
Hadley town, legalize proceedings of free school dis-	
Halliday, Morris S., appropriation for	L. 1908, ch. 51.
Holliday, Morris S., appropriation for	L. 1918, ch. 188.
Hamburgh town, park	L. 1914, ch. 155.
Hamilton county:	
Sheriff salaried office	L. 1915, ch. 200.
Supervisor's sessions	L. 1916, ch. 154.
Taxes	L. 1915, ch. 441.
Hamilton and Essex county dividing line	L. 1915, ch. 718.
Harlem river and Spuyten Duyvil creek improvement	L. 1876, ch. 147.
Harriman Research Laboratory	L. 1913, ch. 4.
Harrison town, sewer district	L. 1913, ch. 74.
Harrietstown town, payment of taxes by the state	L. 1914, chs. 268, 269.
Haverstraw town, relief of poor	L. 1879, ch. 74.
Health officer at port of New York	L. 1914, ch. 254; L. 1916, ch. 631.
Hellenic Eastern Orthodox Christian Church of New York	L. 1905, ch. 749.
Helping Hand Hospital Association of Peekskill	L. 1905, ch. 263.
Hempstead town:	
Bond issue	L. 1917, ch. 820.
Mill river improvement	L. 1918, ch. 427.
Public cemetery	L. 1869, ch. 76.
Sale of lands	L. 1870, ch. 591
Waterways, improvement	L. 1914, ch. 151.

NAME.	STATUTE.
Herkimer county:	
Election records replaced	L. 1917, ch. 148.
Sheriff's office	L. 1903, ch. 319.
Tuberculosis hospital	L. 1915, ch. 362.
Herkimer family:	
Burial lot	L. 1895, ch. 618.
Historic house and grounds	L. 1913, ch. 217.
Herkimer, village of	L. 1854, ch. 125.
Herkimer village, municipal commission	L. 1910, ch. 162.
Herring College	L. 1915, ch. 41.
Highway and canal bonds, interest	L. 1913, ch. 787.
Highways:	
Appropriation, expediting state routes	L. 1911, chs. 154, 155, 741.
Bonds	L. 1906, ch. 469; L. 1907, ch. 718; L. 1912, ch. 298.
County roads	L. 1911, ch. 137; L. 1913, ch. 636; L. 1914, ch. 256; L. 1915, ch. 714.
Expenditure of money for	L. 1913, ch. 768.
Improvement debt	L. 1912, chs. 112, 117; L. 1913, chs. 808, 809; L. 1914, chs. 175, 528; L. 1915, chs. 688, 689, 690; L. 1916, chs. 642, 646; L. 1917, ch. 764; L. 1918, chs. 151, 353.
Indian reservation	L. 1917, ch. 223.
Interest rate on bonds	L. 1913, ch. 787.
Lewiston Heights-Lewiston state highway	L. 1917, ch. 56.
Sinking fund	L. 1913, ch. 810; L. 1914, ch. 271; L. 1916, ch. 646; L. 1917, ch. 764; L. 1918, ch. 151.
State and county highways	L. 1912, ch. 298; L. 1916, ch. 218; L. 1917, ch. 104; L. 1918, ch. 70.
Supplemental contracts	L. 1915, ch. 261.
Tax levy for repairs in 1911 legalized	L. 1912, ch. 64.
Tax levy for repairs by towns in 1914 legalized	L. 1915, ch. 115.
Town highways	L. 1916, ch. 633; L. 1917, ch. 223; L. 1918, ch. 157.
Highway improvement:	
Appropriations	L. 1910, ch. 209; L. 1911, ch. 750; L. 1912, chs. 44, 247, 490, 496, 505; L. 1913, chs. 262, 359, 360, 646, 647; L. 1914, chs. 172, 253, 279, 516, 522, 526; L. 1915, chs. 10, 134, 135, 225, 226, 688, 689, 690; L. 1916, ch. 597; L. 1918, chs. 103, 164, 338.
Certain state routes	L. 1911, chs. 133, 154, 463, 496, 715, 741; L. 1915, ch. 682.
County highways between Albany and New York.	L. 1917, ch. 734.
Indian Reservation, highway and bridges	L. 1915, ch. 134; L. 1916, ch. 174; L. 1918, ch. 157.
Rural post roads within the state	L. 1917, ch. 276, 388.
State routes in Essex and Warren counties	L. 1913, ch. 786.
State routes in Niagara and Orleans counties	L. 1914, ch. 275.
State route No. 1	L. 1911, ch. 467.
State route No. 2	L. 1913, ch. 360.
State route No. 3	L. 1911, ch. 742.
State route No. 4	L. 1911, ch. 92, 136, 348, 559, 733.
State route No. 5	L. 1911, ch. 426.

NAME.	STATUTE.
Highway improvement — continued:	
State route No. 6	L. 1913, ch. 360.
State routes Nos. 14 and 15	L. 1911, ch. 559; L. 1912, ch. 473.
State routes Nos. 21 and 22	L. 1911, ch. 614.
State routes Nos. 22 and 25	L. 1911, ch. 134.
State routes Nos. 27, 28, 30, 33	L. 1911, ch. 741.
State route No. 34	L. 1911, ch. 743.
State route No. 42	L. 1911, ch. 614.
State routes, Westchester county	L. 1911, ch. 657.
State routes within counties	L. 1913, ch. 362; L. 1917, ch. 277.
Stone road, Albany to Binghamton	L. 1911, ch. 135.
Stone road, New York to Buffalo	L. 1910, ch. 532.
Historical Society of Newburgh Bay and the Highlands, free gift of land to state	L. 1917, ch. 326.
Holcomb village, incorporation proceedings legalized	L. 1917, ch. 661.
Homeopathic Medical College and Flower Hospital	L. 1869, ch. 191; L. 1887, ch. 515.
Honor Roll Relief Fund	L. 1915, ch. 301.
Hooker, Warren B., expenses of trial	L. 1918, ch. 593.
Hoosick Falls, street improvement	L. 1909, ch. 541.
Hornell city charter	L. 1906, ch. 288.
Hornell, education	L. 1873, ch. 386; L. 1881, ch. 294; L. 1895, ch. 123; L. 1901, ch. 56.
Hospital development commission	L. 1917, ch. 238.
Hotaling, Chas. R., appropriation for expenses	L. 1918, ch. 262.
Hospital of Good Shepherd of Syracuse	L. 1915, ch. 21.
Houchin-Aiken Company	L. 1918, ch. 102.
Hounsfield town, Carthage, Watertown and Sacketts Harbor Railroad Company	L. 1907, ch. 384.
Hudson city charter	L. 1895, ch. 751; L. 1907, ch. 130.
Hudson Orphan and Relief Association	L. 1846, ch. 90.
Hudson River Connecting Railroad Corporation, bridge	L. 1913, ch. 388.
Hudson river, removal of ice gorges	L. 1912, ch. 503.
Hudson River State Hospital, land conveyed to N. Y. C. and H. R. R. R. Co	L. 1913, ch. 777.
Hunt's Point, land granted to New York city	L. 1916, ch. 499.
Huntington Hebrew Congregation of Huntington	L. 1914, ch. 137.
Hurley, town line altered	L. 1918, p. 2097.
Hyde Park Fire Department	L. 1860, ch. 257.
Hyde Park town, school taxes on state lands	L. 1907, ch. 315.
Hydraulic Power Company of Niagara Falls, consolidation	L. 1918, chs. 596, 597.
Hyland, John F., defending title to county judge of Kings county	L. 1917, ch. 737.

I

Ice comptroller and ice regulation	L. 1918, ch. 4.
Ilion city charter	L. 1895, ch. 315.
Ilion village, bond issue for paving legalized	L. 1913, ch. 531.
Immigrant lodging places	L. 1912, ch. 87.
Impeachment expenses	L. 1913, chs. 802, 835, 836.
Inauguration ceremonies of President of United States, appropriation	L. 1917, ch. 83.
Independent Order of Benar Berith	L. 1878, ch. 188.
Indexing statutes of the state	L. 1917, ch. 332.
Industrial Farm Colony, state lands for military purposes	L. 1917, ch. 384.

NAME.	STATUTE.
Information from electors on registration and election days	L. 1917, ch. 777.
Insurance laws, revision	L. 1913, ch. 707.
Insurance, minimum capital	L. 1899, ch. 85.
Institute of public service	L. 1916, ch. 545.
International Bridge Company	L. 1857, ch. 753.
International Committee of Young Men's Christian Association	L. 1883, ch. 241; L. 1915, ch. 97.
International Railway Company of Buffalo	L. 1903, ch. 637; L. 1915, ch. 518.
Interest rate on certain bonds	L. 1913, ch. 787.
Interest on state debt	L. 1916, ch. 642; L. 1917, ch. 764; L. 1918, ch. 353.
Interstate Bridge Commission	L. 1918, ch. 560.
Interstate Park	L. 1900, ch. 170.
Invalid pensioner, Alice Harvey	L. 1916, ch. 560.
Invalid pensioner, Mary O'Donnell	L. 1916, ch. 561.
Investigation of departments of the state	L. 1913, ch. 2.
Investigation of production and diseases of hops	L. 1913, ch. 737.
Inwood House	L. 1918, ch. 115.
Islip town, cession of state lands	L. 1857, ch. 503.
Italian American civic association	L. 1915, ch. 391.
Ithaca city charter	L. 1908, ch. 503.
Ithaca-Cortland Traction Company railway	L. 1913, ch. 602.
J	
James Stokes Society	L. 1915, ch. 94.
Jamestown, boundaries of school district	L. 1887, ch. 279.
Jamestown city charter	L. 1907, ch. 387.
Jamestown, special terms of supreme court	L. 1902, ch. 274.
Jefferson county:	
Coroner abolished	L. 1916, ch. 110.
Judge and surrogate	L. 1849, ch. 306.
Sell lands	L. 1917, ch. 139.
Soldiers and sailors' memorial hall	L. 1913, ch. 364.
Tuberculosis hospital	L. 1914, ch. 27; L. 1915, ch. 57.
Jesse Ketchum monument commission	L. 1914, ch. 500.
John Boyd Thacher Park	L. 1914, ch. 117.
Johnstown city, boards of education	L. 1880, ch. 524.
Johnstown city charter	L. 1905, ch. 593.
Johnstown city, pavement bonds	L. 1914, ch. 104.
Joint commission of the Protestant Episcopal Church	L. 1914, ch. 71.
Joint legislative committee for relief of city of New York	L. 1917, ch. 282.
Joint legislative committee on taxation	L. 1917, ch. 143.
Joint legislative committee to investigate public service commissions	L. 1917, ch. 782.
Jubilee, water system	L. 1898, ch. 76.
Judgments and awards by board of claims, appropriation for payment	L. 1913, ch. 827.
Jurors, commissioner of	L. 1895, ch. 369; L. 1899, ch. 441; L. 1901, ch. 602.
Justices of the peace, official acts legalized	L. 1912, ch. 71.
Justices of supreme court, eighth judicial district	L. 1916, ch. 165.
Justices of supreme court, third judicial district	L. 1916, ch. 591.
K	
Kehillah of New York City	L. 1914, ch. 105.
Keith, Etta, and others, deed legalized	L. 1912, ch. 307.

NAME.	STATUTE.
Kensico cemetery, transfer of lands	L. 1915, ch. 306; L. 1916, ch. 76.
Kings county:	
Cancellation of tax sale	L. 1914, ch. 377.
Care and reformation of females	L. 1892, ch. 439.
Court house	L. 1909, ch. 390; L. 1912, ch. 357; L. 1914, ch. 218.
District attorney's office	L. 1896, ch. 772.
Grade crossings abolished	L. 1903, ch. 507; L. 1913, ch. 771.
Indexing conveyances	L. 1894, ch. 365.
Jurors	L. 1902, ch. 564.
Penitentiary, removal	L. 1905, ch. 173.
Public uses and trusts released to Andrew Carlson	L. 1913, ch. 763.
Register	L. 1901, ch. 706.
Sheriff	L. 1901, ch. 705.
Territory annexed from Queens county	L. 1915, ch. 410.
Kings Park Free Library and fire department	L. 1916, ch. 141.
Kings Park State Hospital, water supply	L. 1912, ch. 504.
Kings Park State Hospital, power-house	L. 1912, ch. 491.
Kingston city charter	L. 1896, ch. 747; L. 1915, ch. 611.
Kingston city, land purchased for armory	L. 1913, ch. 733.
Kingston city, public park	L. 1918, ch. 33.
Kingston city, United States occupy lands for lighthouse	L. 1913, ch. 468.
Knoxville battlefield monument dedication	L. 1918, ch. 345.
Krom, Silas, deed confirmed	L. 1918, ch. 463.

L

NAME.	STATUTE.
Laboratories, registration and supervision of	L. 1917, ch. 411.
Lackawanna city charter	L. 1909, ch. 574.
La Fayette town, portion of highway abandoned	L. 1913, ch. 622.
Lake Champlain, ferry across	L. 1907, ch. 392; L. 1912, ch. 346; L. 1915, ch. 142; L. 1917, ch. 457; L. 1918, ch. 214.
Lake Champlain tercentenary commission	L. 1908, ch. 149.
Lake Erie battle anniversary celebration	L. 1913, ch. 190.
Lake George, investigate high and low water mark	L. 1912, ch. 255.
Lake George islands, preserving shores of	L. 1917, ch. 754.
Lake Placid, playgrounds	L. 1915, ch. 258.
Lake Placid, publicity fund	L. 1915, ch. 259.
Lamoka Electric Water Power Corporation of Corning, New York	L. 1918, ch. 582.
Land and naval forces of the State, appropriation	L. 1913, ch. 70.
Lands accepted by state under will of H. Salem Curtis	L. 1918, ch. 286.
Lands for military purposes	L. 1914, ch. 273.
Lands for state park purposes	L. 1917, ch. 146.
Lands under water, survey of	L. 1916, ch. 635; L. 1918, ch. 12.
Law library at Albany, court of appeals	L. 1917, ch. 203.
Lehigh Valley Railway Company	L. 1918, ch. 602.
Legislative expenses	L. 1912, ch. 3; L. 1913, ch. 6; L. 1914, chs. 17, 530; L. 1915, ch. 166; L. 1916, ch. 106; L. 1917, ch. 181; L. 1918, chs. 24, 151.
Legislative librarian	L. 1918, ch. 5.
Leroy, village of	L. 1911, ch. 499.
Leroy village, water works	L. 1916, ch. 30.
Letchworth park, lands acquired	L. 1915, ch. 496.

References in the index are to the year and chapter number of the statutes in the supplement.

NAME.	STATUTE.
Letchworth park, public highways	L. 1914, ch. 33.
Letchworth village	L. 1909, ch. 446.
Lexington town, bond issue	L. 1918, ch. 56.
Limestone creek, improvement	L. 1917, ch. 751.
Liquor tax certificates, privileges suspended	L. 1917, ch. 521.
Liquor traffic regulation	L. 1915, ch. 672.
Little Falls and Johnstown Railroad Company	L. 1916, ch. 150.
Little Falls city charter	L. 1895, ch. 565.
Livingston county clerk's office	L. 1903, ch. 200.
Loan companies and brokers	L. 1914, ch. 518.
Lockport city:	
Borrow money	L. 1903, chs. 416, 555; L. 1905, ch. 364; L. 1907, ch. 595.
Bond issue for school building improvement	L. 1912, ch. 431.
Bond issue for water pipe line legalized	L. 1914, ch. 423.
City charter	L. 1886, ch. 120; L. 1911, ch. 870.
Common schools	L. 1847, ch. 51; L. 1850, ch. 77; L. 1858, ch. 95; L. 1863, ch. 377; L. 1866, ch. 378; L. 1867, ch. 822; L. 1873, ch. 234; L. 1873, ch. 623; L. 1902, ch. 223.
Improving Richmond avenue	L. 1915, ch. 715.
Market street improvement, payment by State	L. 1917, ch. 296.
School building	L. 1888, ch. 203; L. 1907, ch. 595.
Long Beach, improving streets	L. 1915, ch. 423.
Long Beach, lighting highways	L. 1915, ch. 126.
Long Island diocesan missions	L. 1902, ch. 394.
Long Island, game farm	L. 1914, ch. 372.
Long Island, ship canal	L. 1915, ch. 461; L. 1917, ch. 317; L. 1918, ch. 588.
Long Island Rail Road Company, eliminating grade crossings	L. 1913, ch. 330.
Long Island State Agricultural School	L. 1912, ch. 319; L. 1913, ch. 710; L. 1916, ch. 639.
Long Island State Hospital, additional accommodations	L. 1916, ch. 258.
Long Lake town, auditing accounts of Ben Lahey	L. 1916, ch. 574.
Long Lake town, borrow money	L. 1917, ch. 522.
Long Sault Development Company	L. 1907, ch. 355; L. 1913, ch. 452.
Low, Will H., legalizing contract	L. 1915, ch. 248.
Lyons village charter	L. 1907, ch. 750.
Lyons village, school district No. 6	L. 1907, ch. 459.
Luzerne town, union free school district proceedings legalized	L. 1908, ch. 51.
Lysander town, school district	L. 1864, ch. 94; L. 1885, ch. 21.

M

NAME.	STATUTE.
Macdonough, Thomas, memorial site	L. 1916, ch. 269.
Maddox, Samuel T., salary paid to widow	L. 1917, ch. 465.
Malone, addition to armory	L. 1917, ch. 434.
Malone, municipal park	L. 1917, ch. 180.
Manhattan Eye, Ear and Throat Hospital and Medical School	L. 1869, ch. 584.
Manhattan State Hospital, cold storage building	L. 1912, ch. 491.
Marcy town, proceedings legalized	L. 1918, ch. 172.
Masonic Hall Association of Watertown	L. 1867, ch. 78.

References in the index are to the year and chapter number of the statutes in

NAME.	STAT
Matteawan village, incorporated in city of Beacon..	L. 1913, ch. 539.
Matteawan State Hospital, drainage...............	L. 1912, ch. 498;
Mayfield town, tax levy legalized................	L. 1918, ch. 212.
Mayville, village of.............................	L. 1867, ch. 451.
Mazeppa Fire Engine Company......................	L. 1861, ch. 87.
Mechanicville Bridge Company, acquisition of bridge.	L. 1912, ch. 287.
Mechanicville city charter	L. 1915, ch. 170.
Mechanicville city, pay moneys to................	L. 1916, ch. 636.
Mechanicville, public park.......................	L. 1901, ch. 45.
Mechanicville village charter....................	L. 1891, ch. 106.
Medina village charter...........................	L. 1909, ch. 545.
Memorial Baptist Church of Albany................	L. 1917, ch. 443.
Methodist Episcopal Church.......................	L. 1869, ch. 182.
Metropolitan Baptist Union.......................	L. 1913, ch. 478.
Metropolitan Museum of Arts in New York City....	L. 1906, ch. 344.
Mexico village, water system bonds legalized.......	L. 1914, ch. 384.
Middlebury town:	
Assessments legalized	L. 1914, ch. 409.
Highway tax money paid over.................	L. 1917, ch. 90.
Unexpended balance	L. 1918, ch. 401.
Middleport Cemetery Association..................	L. 1841, ch. 69.
Middletown city charter..........................	L. 1902, ch. 572.
Military census	L. 1917, chs. 103,
Military and naval purposes, acquisition of land....	L. 1913, ch. 350;
Military training commissions, appropriation.......	L. 1917, ch. 217.
Mill river improvement...........................	L. 1918, ch. 427.
Mineral and mining rights of heirs of Philip Philipse.	L. 1912, ch. 509.
Minerva town line altered........................	L. 1916, p. 2507.
Ministers and Missionaries Benefit Board of the Northern Baptist Convention..................	L. 1913, ch. 107.
Mohansic State Hospital..........................	L. 1915, ch. 713.
Mohawk and Hudson River Humane Society........	L. 1902, ch. 261.
Mohawk river, improvement of dyke.............	L. 1917, ch. 780.
Mohawk river and West Canada creek improvements	L. 1911, ch. 132;
Mohawk village charter	L. 1844, ch. 157.
Mohawk village, Weller Library...................	L. 1913, ch. 20.
Mollen, Margaret, pension........................	L. 1915, ch. 116.
Monument to General Philip H. Sheridan..........	L. 1914, ch. 100.
Monument to 25th cavalry regiment..............	L. 1915, ch. 280.
Monument to 79th regiment, New York state volunteers	L. 1917, ch. 736.
Monroe county:	
Armory	L. 1913, ch. 780.
Collection of taxes.........................	L. 1884, ch. 107.
County treasurers	L. 1875, ch. 605.
Purchasing agent	L. 1902, ch. 309.
Sheriff	L. 1902, ch. 490.
Special county judge.........................	L. 1864, ch. 368.
Supervisor, salaried office..................	L. 1900, ch. 639.
Monroe town line altered.........................	L. 1914, p. 2385.
Montgomery county, auditing of accounts..........	L. 1859, ch. 390.
Moody, Robert, deed legalized....................	L. 1912, ch. 307.
Mooers town, convey lands for cemetery purposes...	L. 1913, ch. 219.
Moriah town, commissioner of charities............	L. 1896, ch. 63;
Morningside Cemetery Association of Syracuse......	L. 1915, ch. 16.
Morrisville State School of Agriculture, acceptance of lands	L. 1915, ch. 370.

NAME.	STATUTE.
Motor vehicle legislation	L. 1913, ch. 644.
Motor vehicle licenses, renewal of	L. 1918, ch. 238.
Mount Kisco, bond issue for improving streets	L. 1916, ch. 213.
Mount Kisco village, sewer bonds	L. 1918, ch. 237.
Mount Morris, consolidating school districts	L. 1866, ch. 727; L. 1887, ch. 199; L. 1888, ch. 267.
Mount Pleasant town, accept land from highways	L. 1916, ch. 76.
Mount Sinai Alumnae Association, pension fund	L. 1913, ch. 640.
Mount Sinai Hospital trustees	L. 1918, ch. 80.
Mount Vernon:	
Buildings for fire and police departments	L. 1905, ch. 87.
City charter	L. 1892, ch. 182.
Comptroller	L. 1895, ch. 710.
Courts of justice of the peace abolished	L. 1915, ch. 612.
Fire department pension fund	L. 1914, ch. 432.
Municipal buildings	L. 1910, ch. 75.
Repaving streets	L. 1909, ch. 361.
Water supply	L. 1911, ch. 127.
Mount Vernon Masonic Guild	L. 1913, ch. 193.
Moyer creek improvement	L. 1912, ch. 497.
Mullins, John W., relief of	L. 1917, ch. 656.

N

NAME.	STATUTE.
Nassau county:	
Bond issue	L. 1916, ch. 153.
Borrow money	L. 1917, ch. 79.
Collection of taxes	L. 1915, ch. 432; L. 1916, ch. 541.
Erection of county	L. 1898, ch. 588.
Preparation of assessment rolls	L. 1915, ch. 432; L. 1916, ch. 541.
Publication of election notices legalized	L. 1916, ch. 542.
Law Library	L. 1903, ch. 315.
Sidewalk claims	L. 1915, ch. 331.
Tax levy for repair of highways	L. 1918, ch. 60.
Water supply	L. 1917, ch. 30.
Nassau Industrial School	L. 1918, ch. 213.
Nassau, village of	L. 1866, ch. 628.
National Academy Association	L. 1912, ch. 305.
National Association of Stationary Engineers	L. 1913, ch. 668.
National Guard at Steuben monument unveiling	L. 1914, ch. 250.
National Guard infantry, reimburse members of for property destroyed	L. 1917, ch. 757.
National Guard, Major Edward Gilbert Schermerhorn reinstated	L. 1914, ch. 126.
National Guard, mobilization of	L. 1914, ch. 527; L. 1916, ch. 645; L. 1917, chs. 3, 740; L. 1918, ch. 348.
National Milk and Dairy Farm Exposition at Grand Central Palace	L. 1918, ch. 168.
National Negro Exposition at Richmond	L. 1915, ch. 711.
Nautical School in the City of New York	L. 1913, ch. 322.
Neahtawanta Lodge, I. O. O. F	L. 1918, ch. 162.
Nehlsen, Emma, interest in real estate released to	L. 1916, ch. 419.
Newark, village of	L. 1885, ch. 74.
Newark village, use of sewer by State Custodial Asylum	L. 1912, ch. 507.
Newcomb, town line altered	L. 1916, p. 2507.

NAME.	STATUTE.
Newburgh:	
Appropriate money for conventions	L. 1912, ch. 260.
City charter	L. 1865, ch. 541; L. 1907, ch. 203; L. 1916, ch. 575; L. 1917, ch. 590.
Excise board	L. 1894, ch. 257.
Fines and penalties	L. 1868, ch. 264.
Newburgh and Walkill Valley railroad	L. 1868, ch. 802.
Payment of fines to almshouse commissioners	L. 1868, ch. 264.
Police pension fund	L. 1907, ch. 205.
Reassessment for sewer construction	L. 1912, ch. 284.
Sale of lands purchased at tax sales	L. 1904, ch. 404.
Schools	L. 1829, ch. 234; L. 1852, ch. 156; L. 1865, ch. 88.
Streets and roads	L. 1867, ch. 674; L. 1906, ch. 595.
Sewer	L. 1893, ch. 49.
Tax certificates cancelled	L. 1912, ch. 413.
Water works improvement	L. 1875, ch. 18.
Water works system	L. 1867, ch. 88.
Newburgh town, support of poor	L. 1853, ch. 44.
New Hartford, part annexed to Utica	L. 1913, ch. 307.
New Paltz, state normal school	L. 1916, ch. 640.
New Rochelle city charter	L. 1910, ch. 559.
New Rochelle Firemen's Benevolent Fund Association	L. 1903, ch. 485.
New York Agricultural Experiment Station	L. 1916, ch. 558.
New York Building and Improvement Co	L. 1881, ch. 598.
New York Central and Hudson River Railroad Co., terminals and motive power in New York city	L. 1911, ch. 777.
New York city:	
Acquire farm site for New York City Reformatory for Misdemeanants	L. 1913, ch. 32.
Acquire lease of premises from state commission in lunacy	L. 1913, ch. 678.
Acquire site for reception hospital for insane	L. 1904, ch. 760.
Additional water supply	L. 1905, ch. 724.
American Museum of Natural History	L. 1905, ch. 292.
Block tax assessment maps	L. 1892, ch. 542.
Botanical garden	L. 1891, ch. 285.
Ceding to United States lands in Jamaica bay	L. 1917, ch. 12.
Chamberlain cancel worthless mortgages	L. 1916, ch. 399.
Charities and corrections	L. 1895, ch. 912.
Charitable institutions exempt from water rent	L. 1887, ch. 696.
City charter	L. 1901, ch. 466.
City Reformatory site	L. 1913, ch. 32.
Claims for unpaid taxes in Queens county compromised	L. 1913, ch. 693.
Codification of municipal court proceedings	L. 1913, ch. 471.
College of Commerce and Administration	L. 1914, ch. 222.
Comptroller, set aside sale of building to William Shanley	L. 1913, ch. 289.
Consolidation act	L. 1882, ch. 410.
Court of general sessions	L. 1907, ch. 412.
Damages, Shaw avenue	L. 1914, ch. 505.
Debt limit for rapid transit	L. 1910, ch. 276.
Determining debt	L. 1912, ch. 440.
Grade crossings abolished	L. 1903, ch. 507.
Grant of lands under water in Flushing Bay	L. 1913, ch. 62.
Grant of lands at Hunt's Point	L. 1916, ch. 499.

NAME.	STATUTE.
New York city — continued:	
Grant of lands in Jamaica Bay	L. 1909, ch. 568.
Grant of land in Jamaica Bay for new harbor	L. 1912, ch. 522.
Grant of lands under Eastchester Bay	L. 1916, ch. 509.
Health and efficiency of policemen	L. 1911, ch. 360; L. 1914, ch. 456.
Illuminating gas	L. 1906, ch. 125; L. 1917, ch. 666.
Indexing instruments	L. 1893, ch. 536.
Inferior criminal courts	L. 1910, ch. 659.
Life-saving station in Queens borough	L. 1913, ch. 188.
Lease of Ward's Island to state	L. 1908, ch. 139.
Manhattan bridge, damages	L. 1911, ch. 737.
Market property assigned to department of docks and ferries	L. 1912, ch. 427.
Metropolitan Museum of Art	L. 1906, ch. 344.
Monuments to commemorate certain regiments in the Civil war	L. 1913, ch. 761.
Municipal court act	L. 1902, ch. 580; L. 1915, ch. 279.
Municipal lodging house act	L. 1886, ch. 535.
New York Bay pollution commission	L. 1906, ch. 639.
N. Y. C. & H. R. R. R. Co., regulation of	L. 1911, ch. 719.
Pier lands for port	L. 1857, ch. 763.
Plumbing	L. 1896, ch. 803.
Price of gas	L. 1917, ch. 666.
Public buildings	L. 1897, ch. 59.
Queens borough public library	L. 1907, ch. 164.
Rapid transit act	L. 1891, ch. 4.
Reception hospital for insane	L. 1904, ch. 760.
Recording and indexing	L. 1889, ch. 349; L. 1890, ch. 166; L. 1904, ch. 127; L. 1914, ch. 465.
Register's office	L. 1884, ch. 531.
Release of certain escheated lands to Raoul Dupuy	L. 1905, ch. 250.
Retirement of justices of municipal court	L. 1911, ch. 846.
Riverside park extension	L. 1907, ch. 676.
Sale of state arsenal lands	L. 1911, ch. 898.
Sheriff	L. 1890, ch. 523.
Warden's office, port of New York	L. 1857, ch. 405.
Water front facilities	L. 1911, ch. 776.
Water supply board	L. 1914, ch. 478.
Water supply, governor prohibit fishing or ice taking	L. 1917, ch. 600.
Widening Pelham avenue	L. 1905, ch. 731.
Volunteer fire department benevolent fund	L. 1866, ch. 633; L. 1886, ch. 15.
New York City Baptist Mission Society	L. 1893, ch. 410.
New York City Society of the Methodist Episcopal Church	L. 1912, ch. 317.
New York City Sunday School and Missionary Society of the Methodist Episcopal Church	L. 1866, ch. 581.
New York College of Dentistry	L. 1865, ch. 264.
New York Commercial Association	L. 1862, ch. 359.
New York Commercial tercentenary commission	L. 1913, ch. 313.
New York Connecting Railroad Company	L. 1900, ch. 752.
New York county:	
Care of records in register's office	L. 1910, ch. 682.
Clerk's office expenses	L. 1884, ch. 295.
Court house	L. 1903, ch. 336.
County clerk's office	L. 1896, ch. 989.
Court of general sessions	L. 1907, ch. 412; L. 1911, ch. 288.

NAME.	STATUTE.
New York county — continued:	
Destruction of records in register's office	L. 1897, ch. 649; L. 1915, ch. 490.
District attorney's office, salaries	L. 1912, ch. 531; L. 1918, ch. 652.
Hall of Records	L. 1907, ch. 712.
Indexing instruments relative to land	L. 1893, ch. 536.
Indexing records	L. 1906, ch. 661.
Public administrator	L. 1898, ch. 230.
Records in county clerk's office	L. 1906, ch. 661.
Records in register's office	L. 1910, ch. 682.
Register's office	L. 1884, ch. 531.
Sheriff	L. 1890, ch. 523.
New York guard	L. 1918, chs. 3, 11.
New York interstate bridge commission	L. 1910, ch. 459; L. 1913, ch. 75.
New York, Kings, Queens, Richmond and Bronx counties grade crossings	L. 1913, ch. 771.
New York Law Institute	L. 1830, ch. 48.
New York Magdalen House	L. 1915, ch. 66; L. 1918, ch. 115.
New York monuments commission	L. 1913, ch. 550.
New York, Ontario and Western Railway Co., convey property	L. 1915, ch. 337.
New York Patriotic Fund	L. 1917, ch. 807.
New York port	L. 1917, ch. 426.
New York port, bulkhead and pier lines	L. 1857, ch. 763.
New York port warden's office	L. 1857, ch. 405.
New York Produce Exchange, arbitration committee	L. 1912, ch. 291.
New York State Association of United Master Butchers of America, Inc	L. 1916, ch. 390.
New York state bridge and tunnel commission	L. 1910, ch. 459.
New York state commission for blind	L. 1913, ch. 415.
New York State Convention of Universalists	L. 1862, ch. 188; L. 1905, ch. 302.
New York State Hospital for Treatment of Pulmonary Tuberculosis at Ray Brook	L. 1913, ch. 381.
New York State Reformatory at Elmira, brickmaking plant	L. 1914, ch. 214.
New York State School of Agriculture on Long Island	L. 1916, ch. 639.
New York State Training School for Boys	L. 1904, ch. 718; L. 1906, ch. 617; L. 1907, ch. 524; L. 1911, ch. 639.
New York State Training School for Girls at Hudson.	L. 1914, ch. 180; L. 1915, ch. 334.
New York State Veterinary College	L. 1916, ch. 629.
New York State Women's Relief Corps Home at Oxford	L. 1914, ch. 251.
New York Zoological Society	L. 1895, ch. 435.
New Utrecht, Kings county, 86th street	L. 1873, ch. 364.
Niagara county:	
Agricultural society	L. 1915, ch. 50.
Election of county treasurer	L. 1899, ch. 151; L. 1912, ch. 234.
Enrollment books	L. 1916, ch. 97.
Sheriff	L. 1894, ch. 160.
Niagara Falls city charter	L. 1904, ch. 300; L. 1916, ch. 530.
Niagara Falls city, tax on foreign insurance	L. 1916, ch. 435.
Niagara Falls and Orleans counties, new state routes	L. 1914, ch. 275.
Niagara Falls Power Co., consolidation	L. 1918, chs. 596, 597.
Niskayuna town, part added to Schenectady	L. 1914, ch. 58.
Non-resident academic tuition, payment of	L. 1917, ch. 288.
Normal school teacher's salaries	L. 1916, ch. 534.
North Castle town lines altered	L. 1916, p. 2505.

NAME.	STATUTE.
North, Chas. H., salary of	L. 1918, ch. 128.
North Hempstead, water plant	L. 1917, ch. 285.
North, Luella R., appropriation for	L. 1918, ch. 128.
Northern New York Conference of M. E. Church	L. 1873, ch. 197.
North Tonawanda city charter	L. 1907, ch. 752.
North Tonawanda city, removal of bodies from Sweeney's cemetery	L. 1914, ch. 229.
Norwich, village of	L. 1904, ch. 7.
Norwich, city of	L. 1914, ch. 34.
Notaries public and commissioners of deeds, legalizing acts	L. 1912, ch. 78; L. 1913, ch. 95; L. 1914, ch. 99; L. 1915, ch. 99; L. 1916, ch. 280; L. 1917, ch. 436; L. 1918, ch. 410.
Nunda, village of	L. 1897, ch. 431.
Nurseries for reforesting lands	L. 1913, ch. 726.
Nyack fire department	L. 1861, ch. 87; L. 1887, ch. 107.
O	
Ogdensburg:	
Board of education	L. 1859, ch. 105.
City charter	L. 1893, ch. 87.
Free text books	L. 1903, ch. 187.
Monument to Brevet Major-General Curtis	L. 1913, ch. 734.
Public market	L. 1918, ch. 431.
Schools and academies	L. 1857, ch. 382; L. 1866, ch. 58; L. 1868, ch. 249.
School commissioners	L. 1893, ch. 454.
Office building for state, acquisition of lands	L. 1917, ch. 706.
Officers and employees of the state serve on draft boards	L. 1917, ch. 810.
Offices for state departments	L. 1915, ch. 350.
Official acts of boards of supervisors legalized	L. 1912, ch. 20.
Ohio town, unpaid taxes	L. 1913, ch. 589.
Olean:	
Abatement of floods	L. 1916, ch. 410.
Cancellation of assessments	L. 1915, ch. 522.
City charter	L. 1893, ch. 478; L. 1914, ch. 436; L. 1915, ch. 535.
Special terms of supreme court	L. 1902, ch. 274.
Sale of armory site	L. 1910, ch. 635.
Olean town created	L. 1915, ch. 535, § 133.
Olean town, union free school district	L. 1882, ch. 168.
Oliver, Edward, restored to National Guard	L. 1915, ch. 292.
Oneida city charter	L. 1911, ch. 648.
Oneida county:	
Board of equalization	L. 1897, ch. 202.
Board of supervisors	L. 1908, ch. 418.
Collection of taxes	L. 1902, ch. 559.
County judge and surrogate	L. 1849, ch. 306.
Enrollment in election districts	L. 1913, ch. 638.
Public hospital	L. 1912, ch. 218.
Sheriff	L. 1898, ch. 321.
Oneonta city charter	L. 1908, ch. 454.

NAME.	STATUTE.
Oneonta city, extra compensation to city officers	L. 1913, ch. 218.
Oneonta and Franklin Turnpike Co	L. 1831, ch. 235; L. 1835, ch. 69; L. 1845, ch. 57; L. 1916, ch. 232.
Onondaga county:	
County auditor	L. 1917, ch. 5.
County clerk	L. 1893, ch. 520.
Collection of taxes	L. 1867, ch. 858.
Dependent children	L. 1918, ch. 145.
Elimination of dangerous underpass	L. 1918, ch. 139.
Employment of prisoners	L. 1851, ch. 32.
Hold real estate	L. 1917, ch. 118.
Maps legalized	L. 1915, ch. 245.
Penitentiary	L. 1851, ch. 32.
Purchasing agent	L. 1906, ch. 20.
Solway State Fair, Syracuse highway	L. 1916, ch. 250.
State land released to	L. 1915, ch. 289.
Supervisors	L. 1906, ch. 10.
Tax for schools	L. 1866, ch. 839.
Onondaga town, school districts	L. 1866, ch. 839.
Ontario county court, jurisdiction over children	L. 1913, chs. 269, 270.
Ontario county, tax sales	L. 1916, ch. 74.
Ontario-Niagara Connecting Bridge Co	L. 1914, ch. 420.
Orange county:	
Bond issue legalized	L. 1912, ch. 12.
Judge and surrogate	L. 1849, ch. 306.
Poor district number one	L. 1911, ch. 876.
Orangetown Union Free School District No. 4	L. 1859, ch. 303; L. 1915, ch. 484.
Order of Eastern Star	L. 1895, ch. 620; L. 1916, ch. 56.
Order of Friars Minor of the Province of the Most Holy Name	L. 1913, ch. 775.
Order Minor Conventuals	L. 1914, ch. 190.
Oriskany creek feeder, appropriation	L. 1910, ch. 518.
Orleans county, sale of property for unpaid taxes	L. 1880, ch. 150.
Ossining Hospital Association	L. 1904, ch. 345; L. 1917, ch. 189.
Ossining town, payment of taxes to school district	L. 1917, ch. 322.
Ossining village charter	L. 1910, ch. 667.
Ossining village, taxes and assessments	L. 1914, ch. 158.
Oswegatchie town, collection of taxes	L. 1866, ch. 127.
Oswego canal, navigation suspended	L. 1912, ch. 282.
Oswego city charter	L. 1895, ch. 394; L. 1899, ch. 304; L. 1903, ch. 249.
Oswego city, Montcalm park	L. 1913, ch. 610.
Oswego county:	
Collection of taxes	L. 1882, ch. 322.
Judge and surrogate	L. 1849, ch. 306.
Supervisor's office	L. 1897, ch. 290.
Tuberculosis hospital, appointment of superintendent legalized	L. 1916, ch. 38.
Oswego Normal and Training School	L. 1909, ch. 592.
Owagena lake, repairing bridge	L. 1913, ch. 704.
Owasco lake, repairing west pier	L. 1913, ch. 654.
Owego Social Service Association	L. 1915, ch. 251.
Owego, village of	L. 1851, ch. 111.
Oyster Bay, support of poor	L. 1916, ch. 239.

NAME.	STATUTE.
P	
Palisades interstate park	L. 1900, ch. 170; L. 1901, ch. 504; L. 1910, ch. 363; L. 1915, ch. 265; L. 1916, ch. 569.
Palisades interstate park debt	L. 1912, ch. 114; L. 1913, ch. 807; L. 1914, ch. 173; L. 1915, ch. 685.
Panama-Pacific International Exposition	L. 1912, ch. 541; L. 1913, ch. 347; L. 1914, ch. 246.
Parole commission in first class cities	L. 1915, ch. 579.
Peabody Education Fund	L. 1867, ch. 329; L. 1867, ch. 498.
Peconic river, deepening channel	L. 1913, ch. 430.
Peekskill village, bond issue for improving streets	L. 1917, ch. 43.
Peekskill, village charter	L. 1883, ch. 117.
Peekskill village, jail and police court	L. 1911, ch. 735.
Peekskill village, municipal building	L. 1913, ch. 336.
Peekskill village, widening Washington street	L. 1913, ch. 89.
Pelham, sewage disposal work	L. 1909, ch. 544; L. 1916, ch. 113.
Penitentiaries, functions	L. 1915, ch. 579.
Penn Yan village charter	L. 1889, ch. 119.
Penn Yan village, paving Main street legalized	L. 1917, ch. 29.
Penn Yan village, repairing Liberty street bridge	L. 1917, ch. 766.
Perinton town, school district borrow money	L. 1916, ch. 256.
Perry town, remove bodies from cemetery	L. 1912, ch. 31.
Perry's victory centennial commission	L. 1913, ch. 190.
Perrysburg town, tax money	L. 1916, ch. 270.
Philadelphia village, proceedings for bonding legalized	L. 1915, ch. 89.
Physicians hospital of Plattsburgh	L. 1917, ch. 566.
Pike town, proceeding for levying tax legalized	L. 1915, ch. 33.
Pinelawn cemetery, transfer of lands	L. 1912, ch. 536.
Plattsburg battle commission	L. 1913, ch. 730; L. 1914, ch. 95; L. 1916, ch. 116.
Plattsburg city charter	L. 1902, ch. 269.
Plattsburg city, lands ceded for Commodore Thomas MacDonough memorial	L. 1916, ch. 269.
Plattsburg city, water bonds validated	L. 1915, ch. 316.
Ploeser, George, defining employment	L. 1918, ch. 599.
Police in first and second class cities	L. 1911, ch. 360.
Pomfret town, school district No. 9	L. 1858, ch. 34; L. 1864, ch. 98; L. 1875, ch. 169; L. 1880, ch. 17; L. 1881, ch. 180.
Port Chester:	
Bonds and certificates of indebtedness	L. 1906, ch. 28.
Ceding land for highway purposes	L. 1911, ch. 518.
Charter, village	L. 1868, ch. 818.
Highways, opening of	L. 1916, ch. 29.
"Old Willet avenue fire house"	L. 1912, ch. 29.
Paving streets	L. 1899, ch. 517.
Police department	L. 1903, ch. 285.
Sewerage system	L. 1912, ch. 155.
Port Jervis city charter	L. 1907, ch. 753.
Port Jervis, protection of property adjacent to Delaware avenue	L. 1904, ch. 716.
Port of New York, investigating conditions	L. 1917, ch. 426.
Port wardens, compensation of	L. 1918, ch. 520.
Potsdam State Normal and Training School	L. 1911, ch. 400.

NAME.	STATUTE.
Poughkeepsie, city charter	L. 1896, ch. 425; L. 1898, ch. 232; L. 1900, ch. 659; L. 1901, ch. 201.
Poughkeepsie town, school tax on state lands	L. 1907, ch. 315.
Poughkeepsie, tuberculosis hospital	L. 1910, ch. 465.
Power house, Albany, heating public buildings	L. 1911, ch. 355.
Power house site, Albany, improvement	L. 1915, ch. 326.
Presbyterian Church, Aurora, N. Y	L. 1918, ch. 61.
Primary election year 1914	L. 1914, ch. 524.
Primary election year 1917	L. 1917, ch. 776.
Prisons, commission on	L. 1906, ch. 670; L. 1910, ch. 365; L. 1916, ch. 594.
Prison guards, salary increase	L. 1918, ch. 566.
Protestant Episcopal Church, clergyman's fund	L. 1855, ch. 459.
Protestant Episcopal Church, parishes in foreign countries	L. 1883, ch. 257.
Protestant Episcopal Church in diocese of Central New York, parochial fund	L. 1860, ch. 376; L. 1912, ch. 285.
Protestant Episcopal Church, Long Island diocesan mission	L. 1902, ch. 394.
Provisional appointments under civil service law	L. 1915, ch. 9.
Prudential Bond and Mortgage Co. of Manhattan Borough, New York City	L. 1915, ch. 263.
Publication of concurrent resolutions	L. 1912, ch. 499.
Public employment office	L. 1918, ch. 356.
Public park and office building	L. 1917, ch. 706.
Public peace	L. 1917, ch. 758.
Public records and history division in education department	L. 1911, ch. 380.
Public service commissions, appropriation to investigate	L. 1917, ch. 782.
Publishing general laws	L. 1914, ch. 169.
Putnam county, highway improvement	L. 1857, ch. 179; L. 1858, ch. 138.
Pythian Home	L. 1893, ch. 249.

Q

NAME.	STATUTE.
Queens Borough Public Library	L. 1907, ch. 164.
Queens boulevard in borough of Queens	L. 1914, ch. 449.
Queens county:	
Commissioner of jurors	L. 1899, ch. 441.
Clerk salaried office	L. 1912, ch. 540.
Grade crossings	L. 1913, ch. 771.
Indexing	L. 1914, ch. 434.
Territory annexed to Kings county	L. 1915, ch. 410.

R

NAME.	STATUTE.
Racing commission	L. 1915, ch. 153.
Randall property in towns on Long Island, power to sell	L. 1914, ch. 441.
Raoul Dupuy and others, real estate released to	L. 1905, ch. 250.
Rapid transit act	L. 1891, ch. 4.
Ravena village, moneys paid to	L. 1916, ch. 49.
Reappropriation bill	L. 1914, ch. 22.
Reception of guests from France and other countries	L. 1917, ch. 520.
Red Hook, town line altered	L. 1914, p. 2387.
Reformatories, functions	L. 1915, ch. 579.

NAME.	STATUTE.
Reformed Protestant Dutch Church of German Flats	L. 1915, ch. 360.
Registration fees for auto trucks, schedule of	L. 1916, ch. 638.
Releasing interest of state in certain real estate to:	
Anna Wagner	L. 1916, ch. 557.
Elizabeth Street, heirs of	L. 1915, ch. 568.
Emma Nehlsen	L. 1916, ch. 419.
Eugenia Quinlan	L. 1918, ch. 575.
Etta Dean Miller	L. 1914, ch. 380.
Executors of last will of Charles W. Dayton	L. 1913, ch. 635.
Fred Cowen	L. 1910, ch. 418.
George Harris, executor	L. 1912, ch. 516.
Heirs and next of kin of Noah D. Tompkins	L. 1913, ch. 57.
Heirs and next of kin of Phillip Grimes	L. 1913, ch. 611.
John R. Ferguson	L. 1914, ch. 499.
Martha E. K. Judge and Clara W. Clark	L. 1915, ch. 474.
Minnie Klingel	L. 1914, ch. 515.
Salem Baptist Church	L. 1914, ch. 386.
William J. Park	L. 1916, ch. 544.
Rensselaer city charter	L. 1897, ch. 359; L. 1913, ch. 481; L. 1915, ch. 69.
Rensselaer county:	
Abolishing office of commissioner of jurors	L. 1913, ch. 553.
Allow claims	L. 1917, ch. 162.
Changing name of acting superintendent of poor	L. 1860, ch. 344; L. 1918, ch. 25.
Clerk salaried office	L. 1915, ch. 244.
Correction of excessive taxes	L. 1916, ch. 259.
Officers and employees of superintendent of poor	L. 1915, ch. 78.
Payment of claims to newspapers	L. 1912, ch. 348.
Payment of claims legalized	L. 1916, ch. 40.
Payments to injured volunteer firemen	L. 1913, ch. 609.
Pension to Calvin J. Green	L. 1916, ch. 539.
Sheriff's officers	L. 1915, ch. 77.
Tax sales legalized	L. 1860, ch. 236; L. 1918, ch. 304.
Remsen town, Fairchilds Cemetery Association	L. 1916, ch. 233.
Reservations in the deed of assignees of Thomas J. Morris, Joseph H. Anderson and others	L. 1913, ch. 641.
Rexford bridge	L. 1917, ch. 742.
Rhinebeck, town line altered	L. 1914, p. 2387.
Rice Memorial Hospital for Convalescents	L. 1916, ch. 339.
Richmond county:	
Commissioner of jurors	L. 1899, ch. 441; L. 1918, ch. 526.
Commitment and discharge of prisoners	L. 1896, ch. 392.
District attorney	L. 1914, ch. 265.
Grade crossings	L. 1913, ch. 771.
Sheriff	L. 1896, ch. 392.
Smoke nuisance prevented	L. 1914, ch. 262.
Riverhead town dock	L. 1915, chs. 44, 414.
Riverside park, New York city	L. 1907, ch. 676.
Robert Fulton monument	L. 1907, ch. 676.
Rochester city charter	L. 1907, ch. 755; L. 1911, ch. 340.
Rochester city, state armory	L. 1913, ch. 780.
Rochester Railway and Light Co	L. 1917, ch. 722.
Rockefeller Foundation	L. 1913, ch. 488.
Rockland county, sheriff	L. 1905, ch. 265.
Rockland county, indexes	L. 1917, ch. 77.
Roman Catholic cathedral in city of Buffalo	L. 1914, ch. 79.
Roman Catholic diocese of Albany	L. 1914, ch. 109; L. 1915, ch. 197.

NAME.	STAT
Rome city charter	L. 1904, ch. 650.
Rome city, state's share for paving	L. 1917, ch. 765.
Rome and Osceola Railroad Co	L. 1918, ch. 35.
Rondout creek bridge	L. 1918, ch. 563.
Rotterdam town, part annexed to city of Schenectady	L. 1914, ch. 58.
Roxbury town, correct enrollment books	L. 1914, ch. 37.
Roy, Robert H., defending title to county judge of Kings county	L. 1917, ch. 737.
Rural post roads, appropriation	L. 1917, chs. 276
Rye town:	
Claim of S. H. Graham	L. 1915, ch. 87.
Public park	L. 1907, ch. 711.
Reimbursement for grant of lands under water	L. 1912, ch. 38.
Union free school district boundaries	L. 1914, ch. 504.
Unpaid school taxes	L. 1915, ch. 39.

S

NAME.	STAT
Saint Ann's Home for Aged, acts legalized	L. 1914, ch. 132.
Saint George's Brotherhood, Flushing	L. 1871, ch. 416.
Saint James' American Protestant Episcopal Church, Florence, Italy	L. 1909, ch. 211
Saint Johnsville village, municipal board	L. 1912, ch. 379.
Saint Lawrence county:	
Boundary line altered	L. 1913, ch. 385.
County judge and surrogate	L. 1849, ch. 306.
Deputy county treasurer	L. 1915, ch. 98.
Farm bureau	L. 1914, ch. 359.
Fish hatchery	L. 1912, ch. 519.
Sheriff	L. 1900, ch. 324.
Uniform text-books in schools	L. 1913, ch. 653.
Saint Lawrence State Hospital	L. 1915, ch. 138.
Saint Luke's Protestant Episcopal Church in Cambridge	L. 1915, ch. 93.
Saint Mary's Cemetery of Rome	L. 1917, ch. 186
Saint Mary's Roman Catholic Church of Rome	L. 1917, ch. 750
Saint Patrick's Cathedral in city of New York	L. 1914, ch. 94;
Saint Paul's Church Cemetery Association of Paris Hill	L. 1917, ch. 116
Saint Peter's Church of the city of Albany	L. 1913, ch. 338
Saint Regis village, dissolution proceedings legalized	L. 1913, ch. 184
Salamanca city charter	L. 1913, ch. 507
Salamanca city, indebtedness legalized	L. 1914, ch. 427
Salisbury town, unpaid taxes	L. 1915, ch. 504
Saltaire village, operation of ferries	L. 1918, ch. 48.
Santa Clara town, payment of taxes by state	L. 1914, ch. 270
Sangerfield and Marshall union free school district	L. 1918, ch. 173
Saranac Lake village, laying out Terrace street legalized	L. 1914, ch. 401
Saratoga battle monument, dedication	L. 1912, ch. 489
Saratoga county:	
Boundary line	L. 1918, ch. 561
County court, jurisdiction over offenses against children	L. 1915, ch. 489
Highway improvement bonds legaized	L. 1914, ch. 391
Sessions of boards of supervisors legalized	L. 1914, ch. 355

NAME.	STATUTE
Saratoga Springs:	
City charter	L. 1915, ch. 229; L. 1916, ch. 229.
Consolidation of schools	L. 1867, ch. 353; L. 1867, ch. 787; L. 1868, ch. 630; L. 1885, ch. 313.
County court, jurisdiction	L. 1915, ch. 489.
Moneys in Adirondack Trust Company transferred to village fund	L. 1913, ch. 172.
Police and firemen pension fund	L. 1918, ch. 532.
Receiver of taxes	L. 1872, ch. 323.
Roads and avenues	L. 1874, ch. 256.
Sewers	L. 1873, ch. 670.
Sprinkling streets	L. 1874, ch. 256.
State reservation	L. 1909, ch. 569; L. 1911, ch. 394; L. 1914, ch. 252.
Tax sales	L. 1880, ch. 68.
Village charter	L. 1866, ch. 220.
Saratoga Springs, state reservation, appropriations	L. 1909, ch. 569; L. 1911, ch. 394; L. 1912, chs. 42, 111; L. 1913, chs. 239, 361, 435, 674; L. 1914, chs. 46, 177; L. 1915, chs. 335, 686, 687; L. 1916, ch. 296; L. 1917, ch. 763; L. 1918, ch. 354.
Saugerties town, police justice	L. 1861, ch. 31.
Schenectady:	
City charter	L. 1907, ch. 756.
Department of public instruction	L. 1908, ch. 481.
Firemen's pension fund	L. 1907, ch. 182.
Incorporation of firemen	L. 1862, ch. 109.
Police pension fund	L. 1907, ch. 183.
Schenectady county, new jail and court house	L. 1913, ch. 132.
Schoharie and Greene county boundary line	L. 1913, ch. 760; L. 1918, ch. 559.
Schoharie county, collection of taxes	L. 1918, ch. 79.
Schoharie State School of Agriculture	L. 1913, ch. 739; L. 1914, ch. 419.
Schoharie Valley Stock Growers' Association	L. 1860, ch. 320.
School books and apparatus	L. 1916, ch. 387.
Schools in cities of state, repealing certain laws relating to	L. 1917, ch. 786.
Schroon town, highways	L. 1917, ch. 284.
Schuyler county, holding town meetings	L. 1913, ch. 615.
Scotia village, note issue legalized	L. 1912, ch. 386.
Scozzafava, Mary Ann, claim of	L. 1915, ch. 264.
Sea Cliff, bathing pavilion	L. 1918, ch. 13.
Sea Cliff, lease lands	L. 1918, ch. 14.
Seneca county:	
Excessive taxes	L. 1916, ch. 351.
Improvement of tributaries to Black brook	L. 1913, ch. 727.
Prisoners, care of	L. 1915, ch. 143.
Sheriff	L. 1899, ch. 547.
Seneca town, school district No. 1	L. 1844, ch. 175; L. 1853, ch. 252; L. 1855, ch. 357; L. 1869, ch. 43; L. 1870, ch. 9; L. 1913, ch. 427.
Session laws, indexing	L. 1913, ch. 673.
Sevey and Cranberry lake highway	L. 1914, ch. 249.
Shawangunk town, bond issue	L. 1917, ch. 60.
Shelter Island town, acquire lands under water	L. 1914, ch. 152.
Shelter Island town, docks	L. 1912, ch. 314.
Sherill city charter	L. 1916, ch. 172.

References in the index are to the year and chapter number of the stat

NAME.	
Sidman Land Co. of Buffalo	L. 1914, ch.
Sidney village, public street through cemetery	L. 1913, ch.
Sigel Real Estate and Investment Co	L. 1916, ch.
Silver Bay Association	L. 1904, ch.
Silver Creek, bonds legalized	L. 1916, ch.
Silver service set for battleship New York	L. 1914, ch.
Sing Sing, releasing interest of state	L. 1882, ch.
Sinking funds	L. 1915, chs. ch. 642; 764; L. 1
Sisters of Charity of Plattsburg	L. 1913, ch.
Simplify the civil practice in courts	L. 1913, ch.
Smithtown, adjacent lands ceded by state	L. 1910, ch.
Society of Friends in Westchester county	L. 1912, ch.
Society for the Welfare of the Jewish Deaf	L. 1912, ch.
Society of War of 1812	L. 1895, ch.
Soldiers and Sailors' Home, salary of clerk	L. 1918, ch.
Solvay-State Fair-Syracuse highway	L. 1916, ch.
Southhampton town, tide gates	L. 1918, ch.
Southhold town, repairing sea wall	L. 1918, ch.
Spanish, Philippine or China campaigns, badges	L. 1913, ch.
Spring, George E., salary paid to widow	L. 1917, ch.
State arsenal lands in New York city, sale of	L. 1911, ch.
State athletic commission	L. 1911, ch.
State board of estimate	L. 1913, ch.
State capitol, lands for public park	L. 1913, ch.
State capitol, power house	L. 1910, ch.
State capitol, reconstruction of	L. 1911, ch. L. 1913, c
State College of Agriculture at Cornell University	L. 1904, ch.
State College of Forestry at Syracuse University	L. 1911, ch.
State commission, retirement pensions	L. 1918, ch.
State comptroller, readjust certain accounts for taxes paid	L. 1914, chs
State comptroller's office, salaries	L. 1913, ch.
State defense council	L. 1917, ch.
State department offices in New York Telephone Co. building, Albany	L. 1915, ch.
State education building:	
Care and maintenance	L. 1913, ch.
Equipment and decorating	L. 1913, ch.
Library and museum	L. 1906, ch.
Protection from injury or trespass	L. 1917, ch.
State employees, increased compensation	L. 1918, ch.
State enumeration	L. 1915, ch.
State fair grounds, cattle building	L. 1912, ch.
State fair grounds, poultry building	L. 1913, ch.
State Farm for Women	L. 1908, ch.
State fire marshal	L. 1912, ch.
State food commission	L. 1917, ch.
State forest preserve debt sinking fund	L. 1916, ch.
State historian	L. 1911, ch.
State Hospital for Insane	L. 1907, ch. L. 1913, c
State house, alterations	L. 1912, ch.
State house, employees' wages	L. 1917, ch.

NAME.	STATUTE.
State institutions	L. 1911, ch. 822; L. 1912, ch. 530; L. 1913, chs. 789, 790; L. 1914, ch. 531; L. 1915, ch. 727.
State lands, compilation of data	L. 1913, ch. 731.
State Library, re-establishment	L. 1911, ch. 901; L. 1912, ch. 521.
State Normal School at New Paltz	L. 1916, ch. 640.
State park	L. 1917, ch. 146.
State power house	L. 1912, ch. 517.
State racing commission	L. 1914, ch. 89; L. 1915, ch. 153.
State Reformatory for Misdemeanants	L. 1912, ch. 502.
State treasurer, services and expenses	L. 1917, ch. 809.
Staten Island Association of Arts and Sciences	L. 1905, ch. 526.
Staten Island Institute of Arts and Sciences	L. 1918, ch. 57.
Statutory consolidation, board of	L. 1912, ch. 393.
Statutory consolidation, investigation of report	L. 1916, ch. 643.
Statutory consolidation, joint legislative committee.	L. 1917, ch. 331; L. 1918, ch. 21.
Statutory record of consolidated laws	L. 1918, ch. 430.
Statutory record of unconsolidated laws	L. 1917, ch. 325.
Street, Elizabeth, heirs of, interest of state released to	L. 1915, ch. 568.
Steuben county, collection of taxes in city of Hornell	L. 1913, ch. 291.
Steuben county, treasurer salaried office	L. 1912, ch. 222.
Steuben Finance Co., Inc	L. 1917, ch. 789.
Stewart, Spencer J., reimbursed	L. 1918, ch. 423.
Stewart, William R., reimbursed	L. 1918, ch. 429.
Stillwater bridge, acquisition of	L. 1913, ch. 546.
Students' Aid Society of Yonkers High Schools	L. 1913, ch. 652.
Suffolk county:	
Clerk salaried office	L. 1915, ch. 128.
Collection of taxes	L. 1915, ch. 84.
County auditor	L. 1916, ch. 107.
Indexes	L. 1917, ch. 107.
Mosquitoes	L. 1916, ch. 246.
Police districts	L. 1909, ch. 583.
Reimburse William F. Flanagan	L. 1914, ch. 258.
Sheriff	L. 1902, ch. 131.
Treasurer salaried office	L. 1915, ch. 129.
Sullivan county, treasurer's salary	L. 1918, ch. 656.
Supervision of public records in education department	L. 1911, ch. 380.
Supreme court, additional justices, third judicial district	L. 1916, ch. 591.
Supreme court, justices in eighth judicial district	L. 1916, ch. 165.
Supreme court, special terms in Jamestown and Olean	L. 1902, ch. 274.
Supreme court library at Troy, appropriation	L. 1917, ch. 268.
Surrogate's court procedure and practice revised	L. 1913, ch. 37; L. 1915, ch. 451; L. 1916, ch. 400.
Susquehanna Valley Electric Traction Co	L. 1915, ch. 324.
Syracuse city:	
Board of education	L. 1897, ch. 752.
City charter	L. 1885, ch. 26; L. 1887, ch. 368; L. 1889, ch. 18.
Court of special sessions	L. 1910, ch. 676.
Department of assessment and taxation	L. 1906, ch. 75.
Department of public instruction	L. 1907, ch. 543.
Department of public works	L. 1905, ch. 684; L. 1914, ch. 300.
Free text-books	L. 1893, ch. 524.

References in the index are to the year and chapter number of the stat

NAME.	
Syracuse city — continued:	
Grade crossings	L. 1912, ch.
Intercepting sewers	L. 1907, ch.
Maps, filing of restricted	L. 1913, ch.
Midwifery, regulating practice	L. 1913, ch.
Municipal court	L. 1906, ch.
Park commission	L. 1906, ch.
Park department	L. 1917, ch.
Public works	L. 1914, ch.
Sewers	L. 1907, ch.
Vocational high school	L. 1914, ch.
Water supply	L. 1906, ch.
Weigh lock building	L. 1910, ch.
Syracuse University, College of Forestry	L. 1911, ch.
T	
Taxes levied for repair of highways in 1914 legaized	L. 1915, ch.
Tarrytown village, paving bonds legalized	L. 1917, ch.
Tarrytown village, lands under water granted for public park	L. 1916, ch.
Teachers' salaries and compensation	L. 1916, ch.
Telephone properties in city of New York, valuation	L. 1914, ch.
Thaw, Mary C., proceedings against John W. Russell	L. 1913, ch.
Three Mile harbor	L. 1914, ch.
Tilden, Samuel J.:	
Anniversary of birth celebration	L. 1913, ch.
Birthplace and homestead	L. 1913, ch.
Tioga county, changing time for holding town meeting legalized	L. 1918, ch.
Tompkins county, game breeding farm	L. 1917, ch.
Tompkins county, proceedings to change town meetings legalized	L. 1917, ch.
Tompkins county, tax sales	L. 1916, ch.
Tonawanda city charter	L. 1905, ch.
Tonawanda creek, improvement of	L. 1917, ch.
Town and village officers, filing of certificates legalized	L. 1914, ch.
Town boards of education	L. 1917, ch.
Town meetings held in year 1918	L. 1918, ch.
Towns, water supply proceedings	L. 1915, ch.
Troy and Cohoes bridge, acquisition of	L. 1913, ch.
Troy city:	
Assessment against state, River street pavement	L. 1916, ch.
City charter	L. 1892, ch.
City court	L. 1900, ch.
Collection of state and county taxes	L. 1892, ch.
Construction of railroads	L. 1851, ch.
Reimbursed	L. 1918, ch.
Water system bonds	L. 1913, ch.
Troy Academy	L. 1834, ch.
Trustees of Central New York Conference of the Methodist Episcopal Church	L. 1870, ch.
Trustees of Council of Young Men's Hebrew and Kindred Associations	L. 1914, ch.
Twenty-fifth New York volunteers cavalry monument	L. 1913, ch.

NAME. STATUTE.

U

Ulster county:
  Game farm .... L. 1913, ch. 759.
  Marking boundary line.......... L. 1918, ch. 562.
  Sheriff .... L. 1906, ch. 65.
Unexpended balances reappropriated.......... L. 1912, ch. 497; L. 1913, ch. 240; L. 1914, chs. 364, 521; L. 1915, ch. 728; L. 1916, ch. 387; L. 1918, ch. 343.
Unexpended balances returned to general fund.......... L. 1916, ch. 126.
Union of Orthodox Jewish Congregations of America. L. 1915, ch. 250.
United German and French Roman Catholic Cemetery Association of city of Buffalo.......... L. 1914, ch. 79.
University scholarships .... L. 1917, ch. 48.
United States, jurisdiction over quarantine.......... L. 1916, ch. 342.
United Synagogue of America.......... L. 1916, ch. 268.
University of Buffalo.......... L. 1846, ch. 193.
Useful occupation required.......... L. 1918, ch. 625.
Utica city:
  Abandoned Chenango canal.......... L. 1887, ch. 456
  Academy building .... L. 1866, ch. 9
  Annexation of part of New Hartford.......... L. 1913, ch. 307.
  Boundaries extended .... L. 1913, ch. 307.
  City charter .... L. 1849, ch. 184; L. 1856, ch. 164; L. 1862, ch. 18.
  Collection of taxes.......... L. 1865, ch 659.
  Common schools .... L. 1842, ch. 137; L. 1844, ch. 131; L. 1846, ch. 7; L. 1850, ch. 66; L. 1854, ch. 348; L. 1870, ch. 118.
  Firemen's pension fund.......... L. 1907, ch. 161.
  Includes part of town of Deerfield.......... L. 1913, ch. 518.
  Park board .... L. 1907, ch. 351.
  School district library.......... L. 1858, ch. 269.
  Taxes collected from certain sources deemed revenues of city.......... L. 1917, ch. 818.
Utica State Hospital site.......... L. 1911, ch. 760.

V

Valeria Home .... L. 1915, ch. 95.
Van Buren town, school district.......... L. 1864, ch. 94.
Van Rensselaer manor maps purchased.......... L. 1912, ch. 508.
Venereal disease bureau.......... L. 1918, ch. 342.
Vocational education .... L. 1917, ch. 576.
Village law, certain provisions not to apply to bonds or other obligations of village.......... L. 1915, ch. 75.

W

Wadsworth, Herbert, deed of gift to state.......... L. 1914, ch. 232.
Wales town, cancellation of Big Tree road assessment .... L. 1910, ch. 565.
Ware, Franklin B., appropriation for compensating.. L. 1917, ch. 240.
Warren county, boundary line.......... L. 1918, ch. 561.
Warren county, fish hatchery.......... L. 1912, ch. 524; L. 1914, ch. 371.
Warren county, reimbursement of.......... L. 1915, ch. 681.
Warrensburg town, boundary line.......... L. 1918, ch. 561.

NAME.	STATUTE.
Warren town, unpaid taxes	L. 1912, ch. 256.
Washington county, bridge across South bay	L. 1912, ch. 518; L. 1917, ch.
Washington county, jury districts	L. 1819, ch. 66.
Washingtonville, bond issue legalized	L. 1917, ch. 11.
Waterford bridge, acquisition of	L. 1913, ch. 548.
Waterford town hall	L. 1873, ch. 127; L. 1874, ch. L. 1914, ch. 43.
Waterford town, toll bridge bond issue legalized	L. 1915, ch. 411.
Waterford town, reimbursed	L. 1918, ch. 135.
Waterford town, water works system	L. 1912, ch. 391.
Waterford village charter	L. 1859, ch. 243.
Waterloo, paving bonds	L. 1915, ch. 145; L. 1916, ch. L. 1917, ch. 178.
Waterloo, village of	L. 1882, ch. 359.
Watertown:	
City charter	L. 1897, ch. 760.
Fire department exempt fund	L. 1915, ch. 103.
Police pension fund	L. 1907, ch. 258.
Watervliet city charter	L. 1911, ch. 184; L. 1918, ch.
Watervliet city, improvement of Dry river	L. 1915, ch. 707.
Watervliet water department	L. 1914, ch. 428.
Watervliet town, part added to city of Albany	L. 1870, ch. 139; L. 1871, ch. L. 1877, ch. 402; L. 1880, ch.
Watkins village charter	L. 1861, ch. 125; L. 1918, ch.
Waverly, Sayre and Athens Traction Co. legalized	L. 1915, ch. 324.
Waverly, village of	L. 1863, ch. 164.
Wawarsing town, file tax lists	L. 1918, ch. 9.
Webb town, unpaid taxes	L. 1916, ch. 136.
Weedsport village, removal of cemetery	L. 1913, ch. 316.
Wenige, Arthur E., reinstated in National Guard	L. 1917, ch. 639.
Wemple property, acquisition of	L. 1917, ch. 575.
Westchester county:	
Assessment and collection of taxes	L. 1914, ch. 510; L. 1916, ch.
Attorney	L. 1917, ch. 549.
Bedford town, trunk sewer	L. 1917, ch. 407.
Bond issue for armory site	L. 1916, ch. 18.
Bond issue for highway improvements	L. 1905, ch. 17.
Bond issue for sewers	L. 1915, ch. 425.
Bronx valley sanitary sewer district	L. 1916, ch. 245; L. 1917, ch.
Building commission	L. 1915, ch. 111.
Commission for future development	L. 1915, ch. 109.
Commissioner of charities and corrections	L. 1916, ch. 242.
Deputy excise commissioner	L. 1918, ch. 567.
Fiscal year for offices	L. 1916, ch. 124.
Harlem valley sewer	L. 1917, ch. 406.
Injured and deceased volunteer firemen	L. 1913, ch. 150.
Issue temporary loan bonds	L. 1913, ch. 42.
Money deposited with county treasurer	L. 1913, ch. 237.
Penitentiary and workhouse	L. 1916, ch. 236.
Publication of official notices by county clerk	L. 1905, ch. 137.
Publication of official notices by board of supervisors	L. 1905, ch. 138; L. 1917, ch.
Publication of quarterly statement of moneys paid out by county	L. 1917, ch. 415.
Public school teachers' retirement fund	L. 1909, ch. 431.
Purchasing agent	L. 1915, ch. 47.
Reimburse town of Mamaroneck	L. 1916, ch. 23.

Westchester county — continued:
  Sanitary trunk sewer .... L. 1917, ch. 646.
  Sewer system .... L. 1905, ch. 646; L. 1911, ch. 361.
  State acquire lands for military purposes .... L. 1914, ch. 273.
  State normal school .... L. 1917, ch. 236.
  Superintendent of buildings .... L. 1915, ch. 29.
  Superintendent of poor .... L. 1915, ch. 211.
  Supervisors .... L. 1902, ch. 342.
  Taxation .... L. 1913, ch. 656.
  Taxation of real property .... L. 1915, ch. 404.
  Taxes and assessments .... L. 1916, ch. 105.
  Unpaid taxes .... L. 1874, ch. 610.
  Washington headquarters .... L. 1917, ch. 247.
Westchester Northern Railroad Co., time extended .... L. 1915, ch. 141.
Western New York and Pennsylvania Railway Co .... L. 1899, ch. 592.
West Seneca high school bonds .... L. 1911, ch. 459.
White Plains:
  Acquisition of land for fire department .... L. 1899, ch. 255; L. 1908, ch. 66.
  Acquisition of land for public library .... L. 1906, ch. 43.
  Assessor .... L. 1905, ch. 619; L. 1908, ch. 70.
  Athletic field for union free school district .... L. 1907, ch. 299.
  Bond issue .... L. 1894, ch. 206; L. 1905, ch. 147.
  City charter .... L. 1915, ch. 356.
  Fire apparatus bonds .... L. 1892, ch. 156.
  Garbage incineration plant .... L. 1907, ch. 317.
  Macadamizing streets .... L. 1899, ch. 353; L. 1903, ch. 451; L. 1906, ch. 80.
  Municipal building loan .... L. 1904, ch. 276.
  Police department .... L. 1904, ch. 306; L. 1906, ch. 165; L. 1907, ch. 337.
  Police pension fund .... L. 1911, ch. 666; L. 1913, ch. 661.
  Public library .... L. 1905, ch. 148; L. 1911, ch. 306; L. 1913, ch. 14.
  Railroad avenue improvement .... L. 1871, ch. 606; L. 1872, ch. 668.
  Refunding local assessment bonds .... L. 1912, ch. 152.
  Sewer system .... L. 1887, ch. 609; L. 1890, ch. 407; L. 1903, ch. 428; L. 1908, ch. 69.
  Street improvement .... L. 1900, ch. 497; L. 1901, chs. 310, 451; L. 1906, ch. 80; L. 1908, chs. 68, 71; L. 1913, ch. 178.
  Street paving .... L. 1895, ch. 747.
  Village charter .... L. 1866, ch. 351; L. 1867, ch. 518.
  Water supply .... L. 1896, ch. 769; L. 1900, ch. 495; L. 1902, ch. 115; L. 1904, ch. 476; L. 1907, ch. 272; L. 1909, ch. 386.
Whitehall town, administration of justice .... L. 1895, ch. 25.
Whitesborough village charter .... L. 1859, ch. 10.
Williamsville village charter .... L. 1869, ch. 129.
Wilmurt town abolished .... L. 1918, ch. 407.
Willard State Hospital, public dock repaired .... L. 1913, ch. 728.
Woman's Board of Home Missions of the Presbyterian Church in the United States of America .... L. 1915, ch. 420.
Women nurses, relief of .... L. 1917, ch. 746.
Woodbury, Egbert B., salary of .... L. 1917, ch. 334.
Woodbury town line altered .... L. 1914, p. 2385.
Woodstock town line altered .... L. 1918, p. 2097.
Workhouses, penitentiaries and reformatories .... L. 1915, ch. 579.

NAME.	STATUTE.
World's Dispensary Medical Association	L. 1912, ch. 303.
Workmen's compensation commission	L. 1915, ch. 104.
Workmen's compensation law	L. 1913, ch. 817; L. 1914, ch. 1
Wright's Corners Cemetery Association	L. 1914, ch. 210.
Wyoming county, public building	L. 1914, ch. 98.
Y	
Yates county, county judge, expenses	L. 1914, ch. 49
Yates county, sheriff	L. 1897, ch. 362.
Yonkers city:	
City charter	L. 1908, ch. 452.
Hospital commission	L. 1910, ch. 586.
Marine terminal	L. 1918, ch. 589.
Refunding bonds	L. 1908, ch. 163.
State armory	L. 1914, ch. 373.
Yorkshire town, bond issue for bridges legalized	L. 1917, ch. 14.
Yorktown town, bond issue for legal proceedings	L. 1917, ch. 40.
Young Men's Associations for Mutual Improvement in City of Albany	L. 1907, ch. 212.
Young Men's Christian Associations of New York	L. 1886, ch. 137.

Legislative Document **No. 31**

STATE OF NEW YORK

ANNUAL REPORT

OF THE

State Engineer and Surveyor

For the Year Ended June 30, 1918

ALBANY
J. B. LYON COMPANY, PRINTERS
1919

STATE OF NEW YORK

OFFICE OF THE STATE ENGINEER AND SURVEYOR

ALBANY, N. Y., *January* 8, 1919

To the Legislature:

I beg to transmit herewith the State Engineer and Surveyor's annual report for the year 1918.

Respectfully,

FRANK M. WILLIAMS,

State Engineer and Surveyor.

TABLE OF CONTENTS

PAGE
Report of State Engineer and Surveyor 7
  Engineering expenses for the fiscal year ended June 30, 1918 49
  Table of contracts completed during the fiscal year ended June 30, 1918 52
  Table of contracts pending June 30, 1918 57
  Summary table of construction work — Barge canal and terminals. 64
Report of Division Engineer of the Eastern Division 69
  Appended reports, Senior Assistant Engineers' 76
  Engineering expenses for the fiscal year ended June 30, 1918 134
Report of Division Engineer of the Middle Division 151
  Appended reports, Senior Assistant Engineers' 154
  Engineering expenses for the fiscal year ended June 30, 1918 186
Report of Division Engineer of the Western Division, including reports of Senior Assistant Engineers 201
  Engineering expenses for the fiscal year ended June 30, 1918 249
Report of tests 261
Report of the Land Bureau 267
Report on relocation of monuments on the Schoharie–Greene, Greene–Delaware and Delaware–Schoharie county boundary lines near Schoharie creek 271
Index of illustrations 275
Index 277

The report of the Gaging of Streams for 1918 is published as a supplemental volume, or Vol. II.

REPORT

The following report to the Legislature covers an account of such of the activities of myself and my Department as is customary to include in the annual reports of the State Engineer, with the addition of the military list of the Department. The State Engineer is a member of four constitutional boards, namely, the Canal Board, the Land Board, the State Board of Canvassers and the Board of Equalization of Assessments, and also of the River Regulating Section of the Conservation Commission. There are various other boards and commissions that are created from time to time for specific purposes, of which he is a member and during the past two years the number of these has been unusually large. These special boards and commissions during 1918 have been the following: State Council of Defense, Hospital Development Commission, Jamaica Bay–Peconic Bay Canal Board, Acquisition of Land for Public Defense at Rockaway, Committee to Investigate the Water-Powers of the State, Interstate Bridge Commission, and Commission to Investigate Canal between Tonawanda and Buffalo.

The work which has taken the greater part of the State Engineer's attention for several years is the construction of the Barge canal and its terminals. In addition there are usually many pieces of public work of various kinds which are built under the supervision of the State Engineer, as well as numerous surveys and investigations which he is authorized and directed to make. Also there are only a few of the several State departments and commissions which have engineering forces of their own and such engineering work as comes under the jurisdiction of those which have none is generally done by the State Engineer. The State, represented by the State Engineer, coöperates with the Federal Government through the Geological Survey in topographic and hydrographic work throughout the state. It is this work of building the Barge canal and its terminals, of supervising these smaller pieces of public work, of making surveys and investigations, both as directed by special legislative acts and at the request of other State departments, and of coöperating with the Federal Survey, that forms the subject matter of my annual report.

In my general discussion of what has been done I shall include the work of the calendar year 1918. The amounts reported as expended for construction and engineering are those for the fiscal year ended June 30, 1918.

BARGE CANAL

COMPLETION FOR OPENING MAY 15, 1918

In my report of a year ago I promised that the new canal would be opened to navigation throughout its entire length on May 15, 1918, and that it at that time would have been constructed to its full depth of 12 feet. That promise was fulfilled, even in spite of the fact that more numerous and greater difficulties arose to defeat the accomplishment than were anticipated when the promise was made. In order that the canal might to the fullest possible extent relieve an unprecedented traffic congestion and also might contribute its share toward solving the all-important transportation problem at a time when the destinies of the nation and of the world hung in the balance, it seemed imperative that the whole new channel should be opened to navigation for the season of 1918. This achievement tried the temper of the State Engineer's Department on a scale and to a degree that it has probably never been tried before, but the engineers and the contractors also were glad to contribute the necessary effort and anxiety to accomplish the desired result.

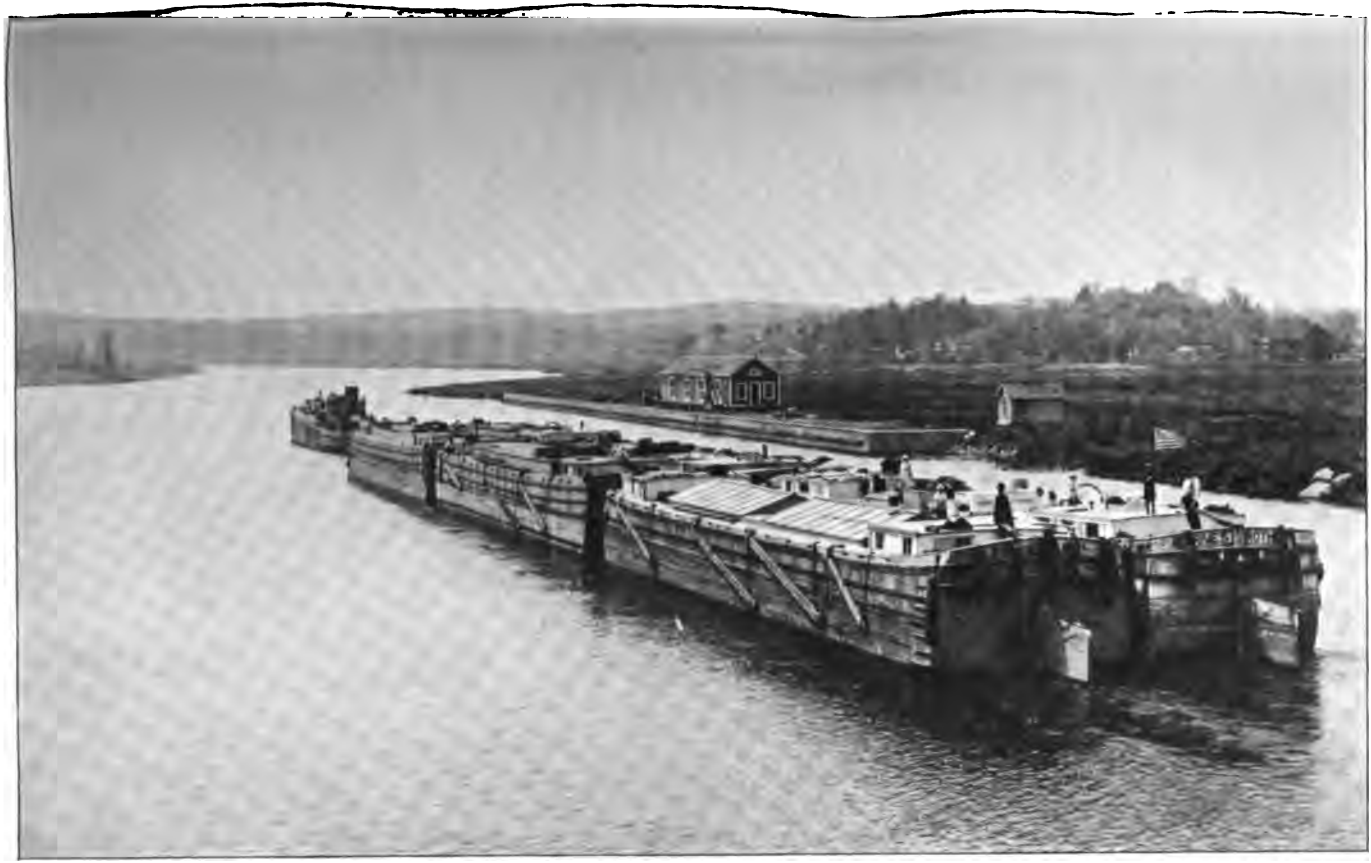
Most of the difficulties were due to war conditions. The cost of both labor and materials had increased enormously and these essentials were hard or even impossible to get at any price. Transportation routes were congested almost to a standstill. Shipments of material were sometimes lost or were commandeered en route for Government activities. Numerous embargoes against shipments were in force. The necessity of obtaining priority orders involved vexatious delays and moreover canal work never was given a class "A" priority rating. There was an acute coal shortage. Men engaged on canal contracts were frequently taken for army service or drawn into shipyards or munition plants. As an instance of this practice — on the railroad bridge at Brewerton three full gangs of erectors were lost one after another within a period of five weeks, and the erection of this bridge had been begun only six weeks before May 15, and if it could not be erected, navigation would be blocked. Much the same thing occurred at the Pittsford railroad bridge. In addition to all hindrances of this character, which were attributable chiefly to the war, the winter of 1917–18 brought more severe weather conditions than had been experienced before in many years.

Several expedients were employed to attain the desired end and thus be able to open the canal at the appointed time. Early in the spring it became evident that the Pennsylvania Railroad Company, because of war conditions in the steel market, could not obtain steel for its crossing of the Barge canal just west of the Genesee river. For a time it seemed as if this failure would frustrate the whole scheme of opening the canal. However, an arrangement was made for diverting the entire traffic of this road, first to the Erie railroad, then to the West Shore railroad and then back to the original line. Thus the Pennsylvania embankment could be cut and this was done just in time to let the water through for the day of opening. At Tonawanda a temporary bridge was built so as to permit the passage of boats, pending the construction of a new bascule bridge. A temporary wooden dam across the Genesee river was an expedient without which the new canal in the vicinity of Rochester could not have been opened for the season of 1918. The necessity of this temporary dam was perceived in the summer of 1917 and proper provision had been made for its construction. At a few localities and for short distances only, a channel of only 50 feet wide was excavated prior to May 15. However, the full depth of 12 feet was obtained at these places, thus making the canal prism of sufficient size to accommodate boats of full Barge canal dimensions.

The work needed to prepare the canal for opening was distributed throughout several sections, chiefly in the western part of the state. In the vicinity of Lyons it became evident in the spring of 1917 that the contractor was not progressing rapidly enough to insure the completion of his portion of canal in time for the navigation season of 1918. Dependent on the completion of this section was another necessary piece of work — the removal of the Montezuma aqueduct, the structure which carried the old canal across the Seneca river and which had to be removed to make way for the Barge canal channel in the bed of the river. If the aqueduct had been removed and the Lyons section had not been completed, then there could have been no navigation, either by the old or by the new canal. To guard against such uncertainty the Canal Board suspended the contract and directed the Superintendent of Public Works to complete the work with State forces. Then a contract for removing the aqueduct was awarded and the structure was removed in time to permit navigation to pass through the river channel.

A similar course of suspension of contract was adopted on the work involved in the Irondequoit valley crossing, but not until March, 1918, when it became evident that such action was necessary. This is the place where the canal is carried through a great concrete trough, built on a high embankment. There was also considerable channel excavation to be done under this same contract. By assembling men and machinery from every possible source the Superintendent of Public Works was able so to hasten operations here that the canal could be opened on time.

In the vicinity of Tonawanda there was so much to do that the work had to be pushed with utmost vigor. Moreover, difficulties were encountered at Pendleton and at Sulphur Springs. The contract for work through Tonawanda could not be awarded until late in 1917, for the old channel in Tonawanda creek was maintained by a dam which had to be removed in carrying out Barge canal plans, and as soon as this should be taken out navigation in the old canal was cut off and several railroad and highway bridges required rebuilding or underpinning. To meet these coördinated requirements demanded swift and well-planned action. Work in this vicinity was apparently progressing satisfactorily until within ten days before the day set for opening. Then a bad slide occurred in the canal channel located in Tonawanda creek. It seemed for a



FLEET OF BOATS PASSING THE BARGE CANAL TERMINAL AT FONDA

These are boats which have been used on the old canal. A fleet of this size, consisting of six boats and a tug, can be passed by one of the new locks at one lockage.

time that a delayed opening was inevitable, but by most energetic efforts a hydraulic dredge was transferred to this point within twenty-four hours and by May 15 the channel had been cleared.

The greater part of what remained to be done a year ago was situated in the vicinity of Rochester. It was known that it would be absolutely impossible to complete the whole of this work by the spring of 1918, but fortunately much of it was located on the spur forming the harbor of Rochester and situated between Rochester and the main line of the canal. By building a temporary dam across the Genesee river and by constructing a junction lock at South Greece and utilizing the old canal between this lock and Rochester, provision was made for through traffic on the main line, which would be a channel of Barge canal dimensions and which passes through the southern border of the city, and for local Rochester traffic by way of the old canal channel. But even to carry out this program a large amount of work was necessary and only by unflagging zeal and persistent effort was success achieved. The rock cut west of the Genesee river was pushed to completion by the contractor. The contractor working on the Rochester harbor contract was ordered to transfer his excavating machines to the main line of the canal. On May 1 it looked as if the junction lock at South Greece could not be completed in time, but by supplying the contractor with men and teams from among those collected for the Irondequoit work delay was averted. The guard-lock east of the Genesee was not ready until the time for opening had almost arrived and it required the extreme limit of effort by night as well as day to get it ready.

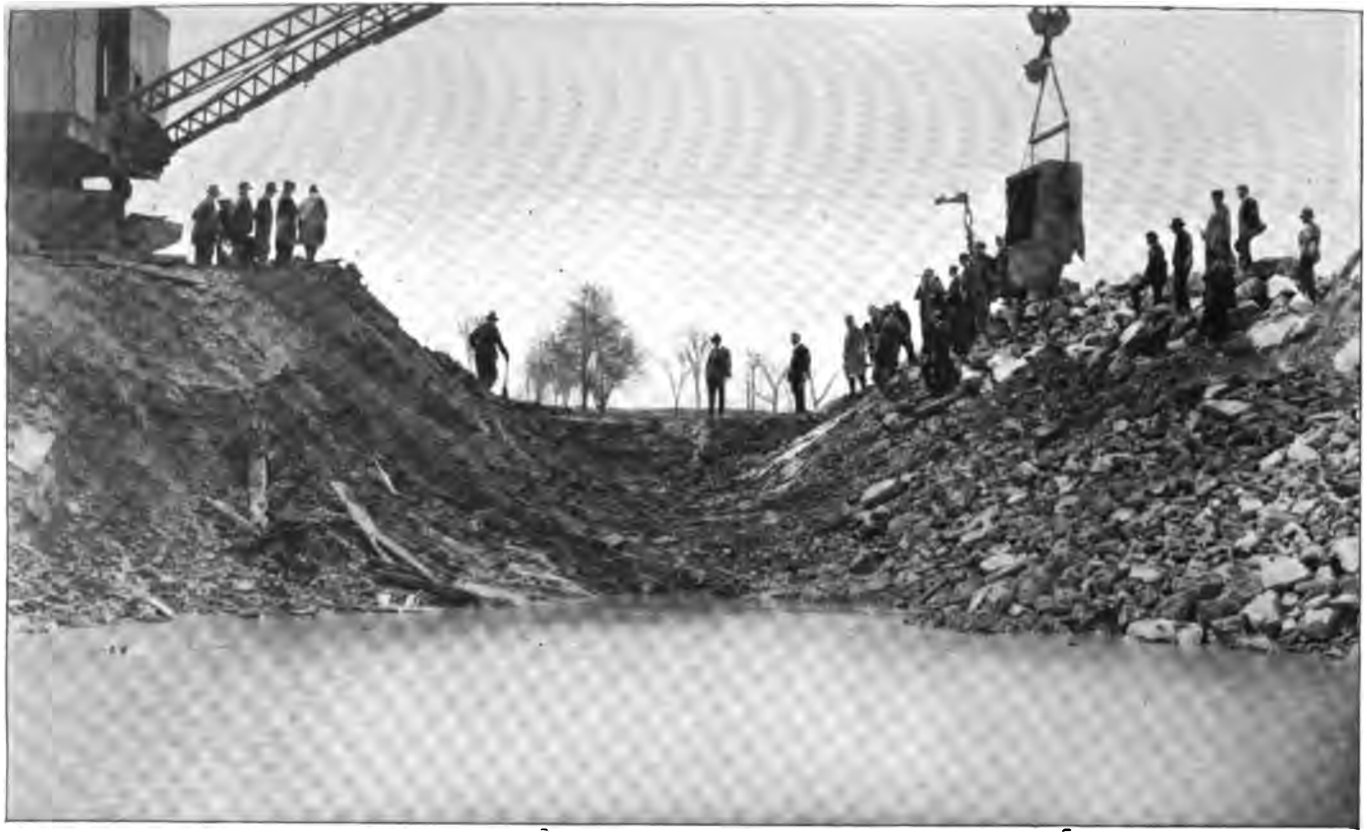
A modest ceremony accompanied the last stages of preparing the canal for opening. The canal crosses the Genesee in a pool created by building a dam across the river below. In order to facilitate operations, most of the canal channel on each side of the crossing was dug as dry excavation, a narrow dike being left at each river bank. On May 10, I had the honor of removing the last barrier to a continuous new channel across the state — a channel which reunites the ocean and the inland seas by means of a great modern canal, which, I trust, will repeat the history of its predecessor and will bring added prosperity to both our State and our Nation. Gathered on the western bank of the Genesee was a small company composed of members of the engineering staff and a few prominent citizens. With a laborer's shovel I opened a small ditch across the intervening dike, letting the waters of the river through to the new channel. Then a drag line excavator enlarged the ditch till the canal channel had been filled and the connection was made. A half hour earlier the dike at the east river bank had been similarly cut. When the canal was opened to traffic on May 15, the event was unaccompanied by ceremony or ostentation of any kind, except that about a hundred engineers and contractors, who had been engaged on the Western division of the canal, assembled in the evening at a hotel in Rochester for an informal dinner in celebration of the event.

WORK REMAINING AFTER CANAL OPENING

After opening the canal to navigation, the largest piece of construction work remaining to be done was that in the Rochester harbor. As I have stated, the expedient of building a temporary dam across the Genesee was adopted. By this means the canal could cross the river and traffic could go on without interruption and at the same time the river would be left free for building the spur to Rochester and completing the harbor and the rather complex adjacent construction. Another work to be done was the widening of the channel at the places where partial widths had been made to suffice for the initial opening. There were many other small pieces of work which were of such a character that they could be done without interfering with navigation. These consisted of completing the removal of the Montezuma aqueduct, building a few bridges and power-plants, removing washed-in material, laying wash wall, cutting off projecting points and other miscellaneous work. In terminal construction there remained much to be done, but of this work I shall speak under a separate heading.

FEDERAL CONTROL OF THE BARGE CANAL

Under the authority conferred upon the President of the United States to take over and operate canals and their floating equipment, and in accordance with the Federal plan to assume control of the transportation media of the country, the United States Rail-



STATE ENGINEER REMOVING THE LAST BARGE CANAL BARRIER

On May 10, 1918, the State Engineer dug a ditch through this dike on the west bank of the Genesee river — the last barrier to through navigation across the state. A half hour earlier he had cut through a similar dike on the east bank.

road Administration included the Barge canal as one branch of this great general system.

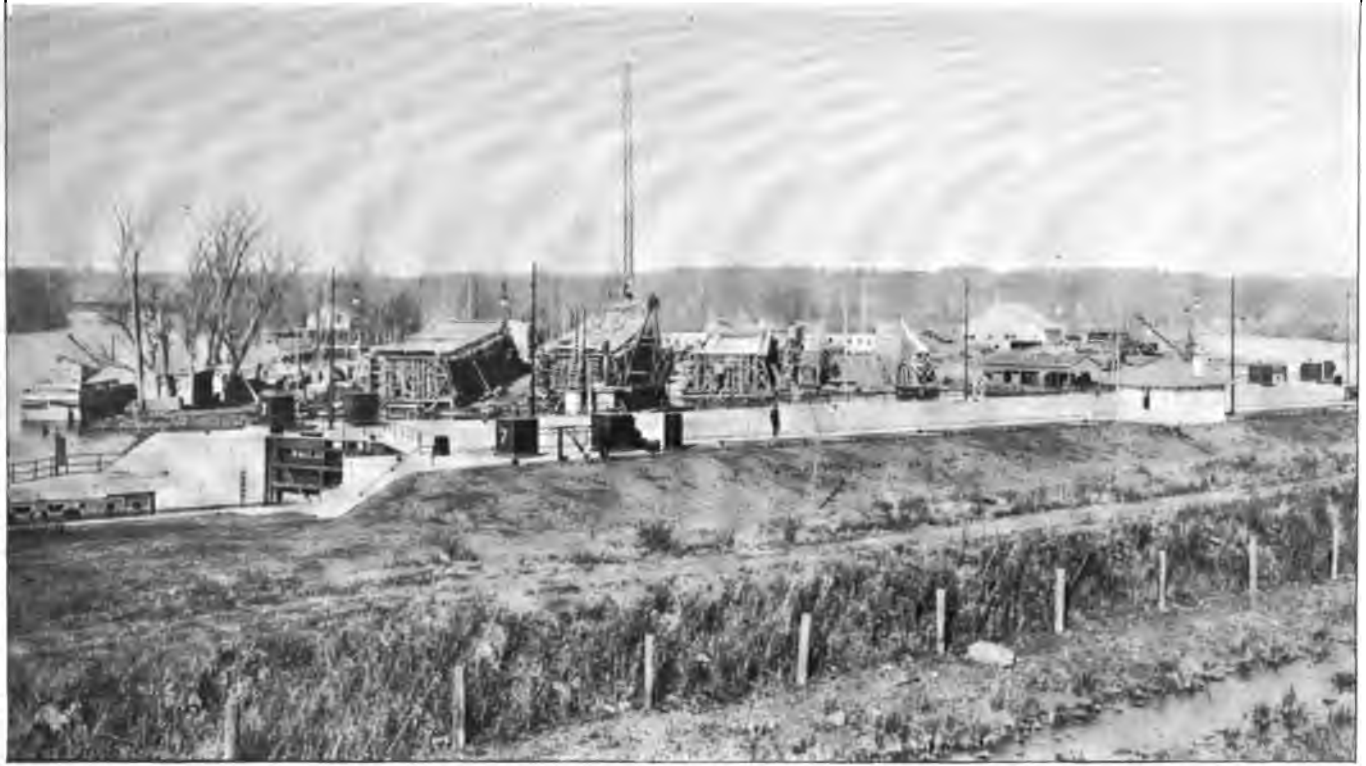
In 1917 the Canal Board, through the Governor, called the attention of the United States Government to the fact that the canal would soon be completed and that, if full advantage was to be taken of it, it must be equipped with boats. Subsequently, various State officials, canal organizations and individuals brought the subject before such of the Federal Departments, War Boards and army officials as had to do with transportation matters. Various plans were submitted to the Government by individuals covering the granting of financial assistance on the part of the Government to private canal transportation companies, which it was planned to organize. Similar requests for financial assistance were made to the Canal Board, which, of course, had no authority to act in the matter.

On January 31, 1918, I appeared personally before the United States Senate Committee on Commerce, in the course of its investigation of matters connected with the building of merchant vessels under the direction of the United States Shipping Board Emergency Fleet Corporation, and there I pointed out that the Barge canal would be opened the following spring; that as to its value as a military asset, it was not in the province of the State officials to judge; that here was a transportation system lying directly on the west and east line of traffic, and, if it should prove that this canal might have been utilized as a military adjunct and was not so utilized, the responsibility must rest on those Governmental authorities having the question of transportation in hand, whose attention had been called to it.

I pointed out, further, that while a waterway would be ready, floating equipment would be sadly lacking, because the increased prices of labor and materials made it prohibitive for private enterprise to construct boats, and that it was doubtful if boat-building materials could be obtained by private enterprise at any price. It therefore became the duty of the Federal Government, if the canal was to be utilized, to provide the floating equipment or to assist by some method in providing it.

In thus formally calling the attention of the Government to the existence of the canal and the possibilities of its use, I stated that the State of New York had nothing to gain, nor had any of its officials, but that we considered it our patriotic duty to do our utmost to open the canal and make it serve the purpose of the hour to the fullest possible extent and to call the attention of the Government to it.

As a result, the Federal authorities investigated the canal and finally assumed control of it in a somewhat limited manner. I need not remind you that according to our State Constitution the canals must remain forever the property of the State. The State has always maintained and operated them and during Government control it has continued to do this, the same as heretofore. Unlike its administration of the railroads the Federal Government was not called upon to assume certain financial obligations in connection with the canal. It did not have to guarantee the payment of dividends nor provide for the upkeep of the property, nor in fact did it have to assume any obligation whatsoever connected directly with the canal itself. What it did was to take over control, either directly or indirectly, of the floating equipment on the canal. Its position was nearly analogous to that of a large transportation company which builds and operates boats on a State-owned canal. It obtained control of a large proportion of the boats which had been in use on the canal during recent years, although the whole number of such available craft is not large, and it built a few new boats, which were just beginning to be delivered when the navigation season ended. However, the Government became more than a mere transportation company; it stood ready to control all shipping on the canal, assuming the right under authority of Congress to commandeer any and all boats doing business on the waterway and even to direct the activities of those it did not commandeer. In fact for some time the impression was general among the independent boatmen that the Government would not permit them to operate on the canal. Of course the Government had no authority to grant or withhold permission to float a boat on the canal. Such authority rested solely in the Superintendent of Public Works of the State and could only be exercised by him. However, the Government could fix canal rates and it proceeded to do so. Much criticism has been aroused by this fixing of an arbitrary rate for interstate traffic approximately 20 per cent less



SHIPYARD FOR THE CONSTRUCTION OF GOVERNMENT CONCRETE CANAL-BOATS

Located near lock No. 7, at Fort Edward. The boats built here were some of those constructed by the Federal Government as a war measure during its control of the Barge canal.

than the railroad rate. It is claimed that this is not based on operating expense and that the differential in favor of the canal would be much greater if the rates could adjust themselves as they had heretofore. The fleet of boats operated by the Government was entirely inadequate, both in number and dimensions, to test the canal's capacity. The new boats which were ordered built were not delivered in time. It is apparent that if the canal is to serve an enlarged purpose next year it must be furnished with a largely increased number of new boats and that either freight must be diverted to it artificially or the present canal rate must be materially reduced or permitted to seek its own level by the introduction and operation of independent canal transportation companies.

USE OF THE CANAL

The navigation season which has recently closed — the first season of navigation throughout the whole extent of the improved canal — has been, so far as this department is concerned, very satisfactory.

The engineering structures have served the purposes for which they have been built in a highly creditable manner. There have been no failures on the part of the locks, dams, guard-gates and the multitude of minor structures which form a part of this canal. Many such structures were thrown into service for the first time last spring, including the new concrete trough at Irondequoit and the locks and heavy embankments in that vicinity and between that point and the Genesee river.

One section after another of the Barge canal has been thrown open to traffic in succeeding springs. The feeling of suspense on the part of the engineering organization, which must always accompany the first try-out of new structures, has been coupled with a growing confidence, as these structures, one after another, met the demands made upon them and justified the work of the designer and the builder.

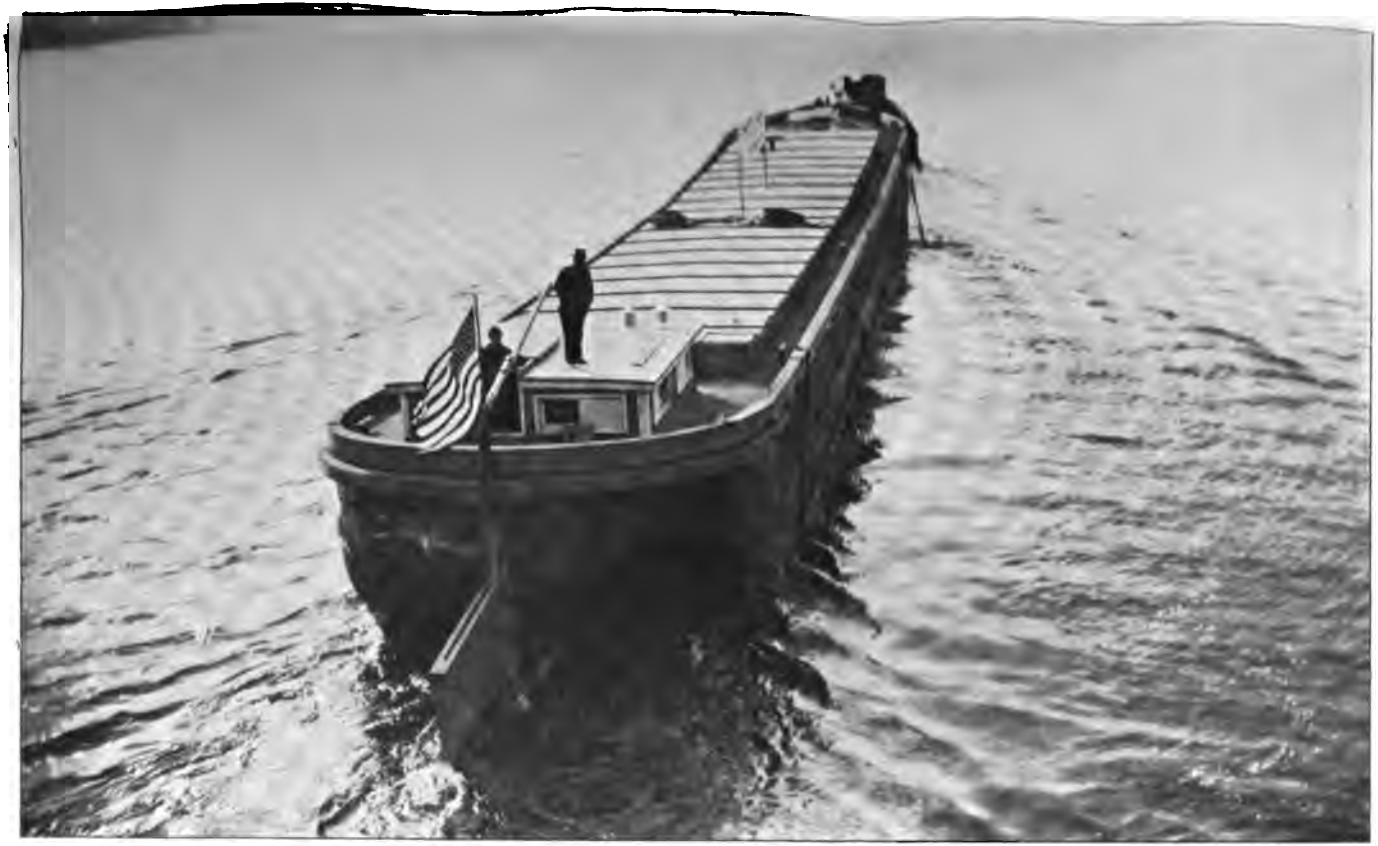
It is not my province to report to you in detail concerning the traffic of the season, but I desire to state a few facts concerning the nature of this traffic.

That the canal has been remarkably successful in handling the traffic at certain localities is attested by the crowded condition of the terminal warehouses at those places throughout most of the season. At some of these terminals it has been necessary to build additional warehouses. It was not an unusual occurrence for these houses to be filled with freight.

Some cities, which had not heretofore been accustomed to ship much material by canal, developed into considerable waterway users. There are certain commodities, also, which are new on the list of canal freights or which have not appeared on that list for some years. Among these are gasoline, kerosene and other oils, molasses, coffee, copper, and electrical machinery, apparatus and supplies. Flour, too, was shipped in considerable quantity for the first time in many years. In general a much higher class of freight was carried than in former years, the total valuation being nearly 50 per cent over that of 1917.

In certain localities the shipment of war supplies was in part responsible for new traffic development and also for the addition of some unusual commodities. At Amsterdam and Utica, for example, war orders of knit goods were shipped by water. The canal had an opportunity to demonstrate that its usefulness is not confined to the carrying of low grade freights. It demonstrated that it is adapted to the carrying of package freights as well. Moreover, a large number of various kinds of craft, built at inland shipyards under Government war orders, utilized the Barge canal to reach the seaboard.

The canal was handicapped during the season by much misinformation regarding its condition and possibilities for use, which was spread broadcast, perhaps without malicious intent, but generally without any basis in fact. That the Barge canal should be completed to a point which permitted its full utilization seemed beyond the belief of many who had noted the long years during which it had been under construction. Entirely new navigation conditions aroused the timidity of the man accustomed to navigation on a shallow restricted channel. His fears or ignorance often gave rise to false stories of conditions. The mere fact, however, that there has been brought through the entire line of the canal boats having a width of not less than 30 feet and drawing 9½ feet



A GOVERNMENT CONCRETE BOAT IN THE CANALIZED HUDSON RIVER
This is one of the boats built at Fort Edward which has just left the shipyard.

of water, as shown by the records of the office of the Superintendent of Public Works, should indicate that the canal is, as claimed, in a condition to accommodate the size of floating equipment for which it was designed and constructed.

It is reported that the grain shipments were three and a half times those of the preceding year, but notwithstanding this increase, at the close of navigation there was lying in the Buffalo harbor, awaiting shipment, twenty times as much grain as had been carried on the canal during the whole season.

There have been a few large corporations that have put their own boats on the canal. These boats either have been built for the purpose or have been remodeled old craft. Among these industrial establishments are the General Electric Company, the Standard Oil Company, the Ore Carrying Corporation and the Valvoline Oil Company.

Within the last year or two an appreciation of the value of waterways and a realization of the need of an adequate national waterway policy have been increasing rapidly throughout the country. Possibly the war may have had its influence in this direction. The annual report of the Interstate Commerce Commission, recently submitted to Congress, recommends the development and encouragement of inland waterways and the coördination of rail and waterway transportation, a policy early recommended by the Barge Canal Terminal Commission of this State and lately put into effect by legislative act. Renewed interest is evident in advocating the Lake Erie and Ohio River and the Lake Erie and Lake Michigan canal projects. The Barge canal occupies the most strategic waterway location in the country. It is the direct and logical route between the Middle West and the Atlantic ocean. It is the shortest and cheapest water route between the Great Western grain belt and European markets. It is the connecting link between two great waterway chains.

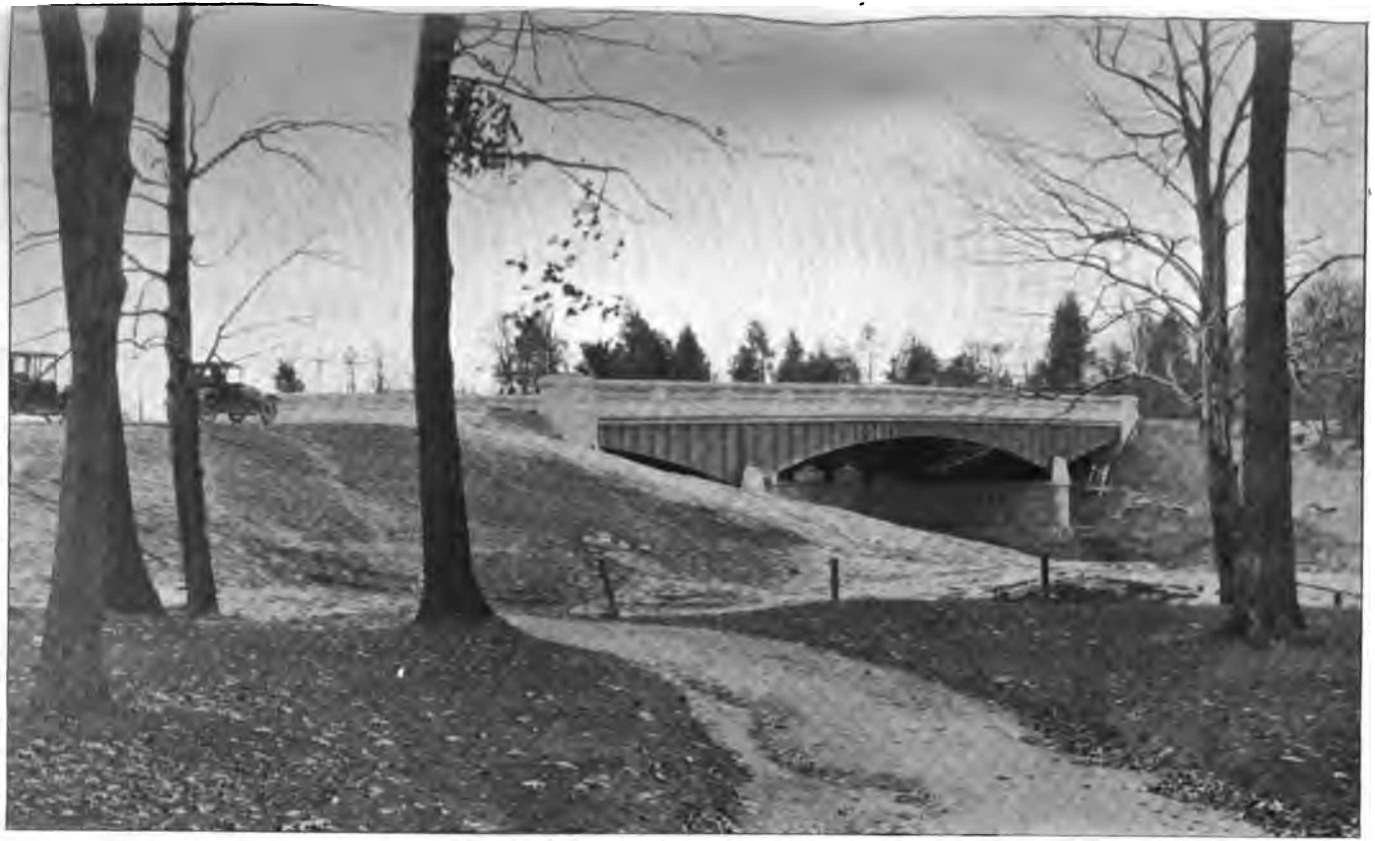
This Department, in company with canal advocates in general, has been endeavoring for years to tell the people of the State the advantages of shipping by canal. But still one of the great needs of the canal at the present time is publicity — a campaign of education.

WORK AT RAILROAD CROSSINGS

During 1918 the few remaining railroad crossings have been so nearly completed that very little now remains to be done. There were eleven of these crossings on which work was in progress during the year. One was at Schenectady, one at Brewerton, one at Lyons, two near Rochester, two at Tonawanda, one at Cayuga, one near Seneca Falls and two near Geneva. Construction has been carried on without interfering with canal transportation, although, as I have previously stated, certain expedients had to be adopted to make it possible for both canal and railroad traffic to continue without interruption.

CANAL MAINTENANCE

Again I call your attention to the fact that construction funds should not be drawn upon to pay for certain work on the new canal that in reality is chargeable to maintenance. Such diversion of construction funds was never contemplated in the original estimate and is manifestly unjust. Provisions should be made from year to year for this work in the maintenance appropriation, and moreover, it should be realized that it will cost much more to maintain the new canal than it did to maintain the old. Moreover, much of the equipment employed in the maintenance of the old canal is entirely unsuited and inadequate for the maintenance of the new one. Aside from the fact that the Barge canal has been constructed on a much larger scale than was the old canal, the underlying theory of construction is entirely different as between the two. The old canal was essentially an artificial channel, retained partially by a series of embankments. The Barge canal for the greater part of its length is, on the other hand, an adaptation of natural watercourses by their enlargement and regulation to navigation purposes. While the work of maintaining the old canal consisted largely of guarding and repairing the embankments, the work of maintaining the new canal will consist principally of dredging and bank protection against wash, both natural and artificial, together with the maintenance of structures of enormous size as compared with those on the old



MAIN DRIVE BRIDGE, GENESEE VALLEY PARK, ROCHESTER

This bridge spans the canal. In design it is a counterbalanced steel cantilever bridge, with concrete floor and balustrades and asphalt roadway.

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canal, and so located that their foundations instead of being susceptible of approach in the dry are to be found in submarine locations. The department charged with maintenance of the Barge canal should be equipped with the most improved type of floating excavating machinery of a size commensurable with the work which it will be called upon to do. It is proper that the Legislature should meet this situation. I recommend that necessary appropriations for adequate equipment be made.

Considerable time has been spent by the forces of this Department in assisting in maintaining a clear channel within the canal. In maintaining the canals there will always be engineering work to be done. There will be new construction to be planned and supervised, repairs to be planned for old construction, a base line to be maintained and property lines, channel obstructions and buoys to be referenced to it, surveys and estimates to be made and numerous other engineering operations of like character. In past years provision has been made for such work by an appropriation entitled, "Ordinary Repairs to Canals." An appropriation of this kind should be made this year, but it should be much larger than heretofore, somewhat in proportion to the differences in size of the two canals. As construction work is finished it is planned to retain part of the engineering force on maintenance work. Probably this can be done on the Eastern and Middle divisions during the present year and on the Western division next year. I recommend that sufficient appropriation be made to carry this maintenance organization for the Eastern and Middle Divisions of the canals for the next fiscal year.

FEDERAL CONNECTIONS AT CANAL TERMINI

At the main termini of the Barge canal, Federal waters are encountered. To render the canal fully efficient adequate connecting channels and the necessary harbor works must be provided, and to accomplish this the Federal Government must complete its work at certain of these termini. These Federal waters are at Waterford, Whitehall, Oswego and Tonawanda. For some of these adjoining projects Federal surveys have been made and Federal appropriations provided. One of the most important of these projects is the deepening of the Hudson, the accomplishment of which would bring the Barge canal in touch with ocean-going traffic one hundred and fifty miles nearer than is now possible. In view of the considerable sum spent by New York State in constructing its new canal, and in view also of the immediate need for proper outlets, the expenditure required for these adjoining works should be contributed by the Government without delay. Therefore, I review my recommendation that "your honorable body by proper legislative action communicate with the Federal authorities urging this necessity."

USE OF SURPLUS WATERS

During the whole of my terms of office as State Engineer I have been in hearty accord with the general principles of conservation of natural resources and especially with that important phase of the subject which involves the conservation of water-power. I quote from my report to you of 1917:

"We are today having called to our attention more forcibly than ever before the absolute necessity of conserving all forms of energy. It therefore behooves the State to give the question of the use of its surplus waters the most careful consideration and reduce to a minimum the wastage of power. State officials and others who have given the subject some thought agree that a strong, definite policy should be adopted in treating the broad question of power development and flood control in the rivers and streams of the state. I am strongly of the opinion that the State should not embark in any proposition of this nature or become a party to any undertaking until the many varied and complex problems which are involved have been approached from all angles and solved in such a way as to insure the greatest ultimate benefit to both the State at large and its citizens.

"There is, however, a situation which confronts the State today that, in my opinion, merits immediate consideration at your hands: The construction of the Barge canal has incidentally made available for development power aggregating several thousand horse-power, and situated as it is on the line of the canal it is available for use in the thriving communities that border the

State's waterways. Under present laws the State is prohibited from disposing of any surplus waters thus created. I believe that legislation could be so drawn as to permit the leasing of these waters under long term leases which could safeguard canal interests. By taking such action the State would be assured of additional revenue, the amount of power within the limits of the State and available for industrial purposes would be increased and there could be no possible interference with any policy which the State may hereafter adopt in treating the general question of stream conservation. Failure to permit this surplus power to be put to some good and useful purpose is not in my opinion justifiable and I ask that you give the subject the most serious consideration."

BARGE CANAL TERMINALS

WORK OF THE YEAR

Work on canal terminals has progressed steadily during the past year. Most of them had been equipped with dockwalls and terminal areas prior to the canal opening last spring, and at several localities there were temporary warehouses and partial equipments of freight-handling devices, so that the terminals were ready for whatever traffic might be offered. This summer these facilities have been enlarged and added to so far as it was possible to do so. Some new freight-houses were constructed, some rail connections were made and freight-handling apparatus was installed.

STATUS OF TERMINALS

The status of each terminal at the present time appears in a brief statement in the following paragraphs. The arrangement is geographical.

New York Bay and Hudson River

Gowanus Bay. 870 ft. of bulkhead wall built; one pier 150 ft. by 1,200 ft. under construction; plans for shed on this pier in preparation; water 35 ft. deep except at piers and immediately adjacent to bulkhead, where depth is 12 to 15 ft.; 30 acres of graded area back of the bulkhead walls.

Pier 5, New York City. Existing pier 550 ft. by 70 ft.; 2 auto-cranes and portable conveyor installed.

Pier 6, New York City. Existing pier has been enlarged to 563 ft. by 85 ft.; freight-house under contract.

Long Island City. Existing bulkhead 675 ft. long; freight-shed and paving of site under contract.

Greenpoint. Existing pier 320 ft. by 26 ft.; new pier 410 ft. by 90 ft. built; 300 ft. bulkhead wall available; 4 acres area and concrete warehouse 161 ft. by 61 ft. available.

Mott Haven. Bulkhead wall built and area graded.

West 53rd Street. Pier under construction.

Albany. Dockwall 1,510 ft. long built; area 60 ft. wide paved; one 12-ton steel derrick installed; freight-house completed; track connections with D. & H. R. R. made.

Troy (Lower Terminal). Dockwall 960 ft. long built; area graded and partly paved; freight-shed with area of 2,285 sq. ft. built; two 3-ton steam-operated timber derricks and one 2-ton auto-crane installed; track connections with New York Central and Boston & Maine railroads made.

Troy (Upper Terminal). Contract to raze buildings and grade area awarded.

Cohoes. Wall 150 ft. long available for light draft boats.

Champlain Canal

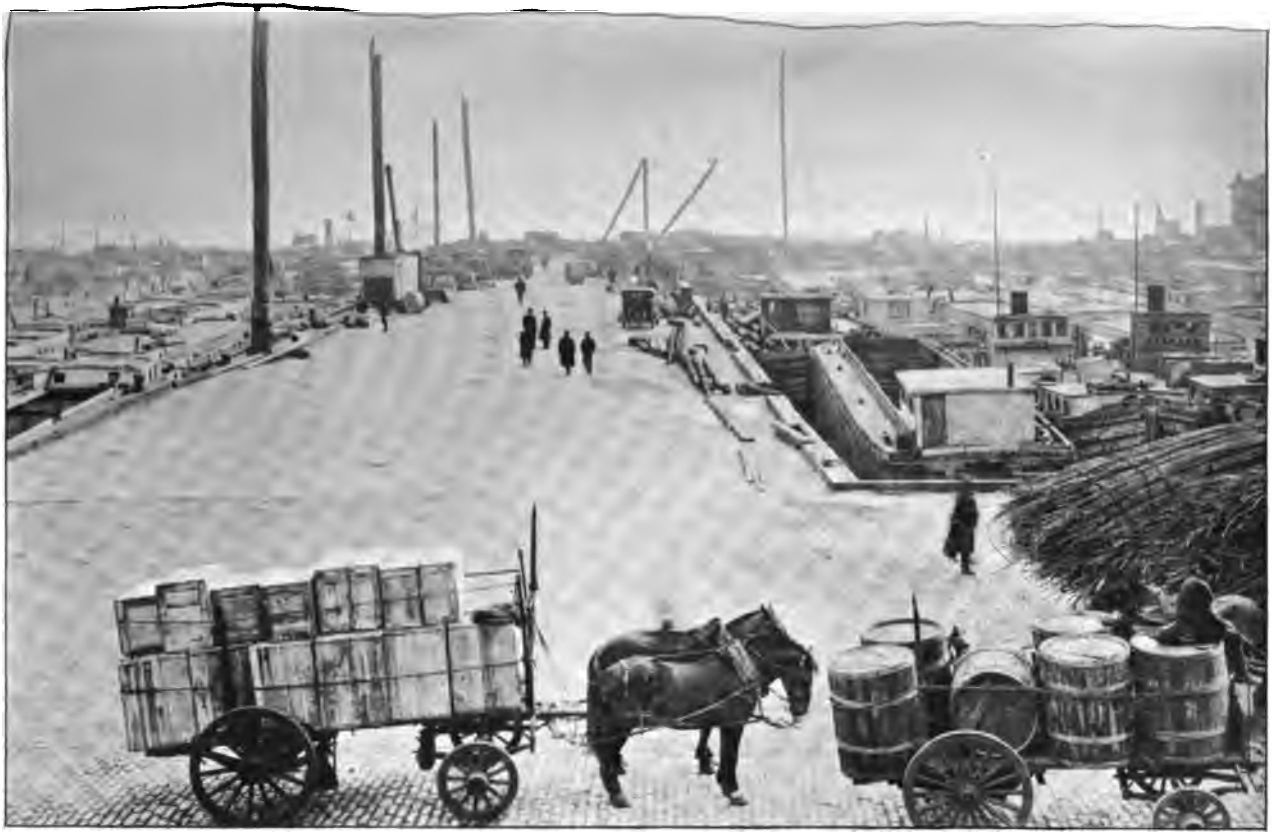
Mechanicville. Dockwall 430 ft. long built and area graded; freight-house with floor area of 480 sq. ft. built; one 2-ton timber derrick installed.

Schuylerville. Section of old canal maintained in lieu of other terminal construction.

Thomson. Dockwall 240 ft. long built and area graded.

Fort Edward. Dockwall 640 ft. long built and area graded; freight-house with floor area of 480 sq. ft. built; one 2-ton timber derrick installed.

Whitehall. Dockwall 470 ft. long built and area graded; freight-shed with floor area of 2,560 sq. ft. practically completed; one 12-ton steel derrick installed.



Barge Canal Terminal at Pier 5, E. R., New York

While the other New York city terminals are under construction, most of the canal traffic is accommodated at this pier, since, after the State acquired it, it could be used without many alterations.

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Port Henry. Pier 500 ft. by 75 ft. built; freight-house with floor area of 480 sq. ft. built.

Plattsburg. Pier 400 ft. by 200 ft. built.

Rouses Point. Pier and dredging begun by contract cancelled under provisions of chapter 585, Laws of 1918.

Erie Canal

Waterford. Wall 300 ft. long available; existing store-house available.

Crescent. Dockwall 150 ft. long built.

Schenectady. Dockwall 1,020 ft. long built and area graded and paved; freight-house with floor area of 1,600 sq. ft. built; one 2-ton timber derrick, one auto-crane and one portable package conveyor installed; track connections with New York Central railroad made.

Amsterdam. Dockwall 600 ft. long built and area graded and paved; two freight-houses with combined floor area of 6,000 sq. ft. built; one 2-ton timber derrick and one auto-crane installed.

Fonda. Dockwall 600 ft. long built and area graded and paved; freight-house with floor area of 1,600 sq. ft. built; one 2-ton timber derrick installed.

Canajoharie. Dockwall 410 ft. long built and area graded; freight-house with floor area of 1,600 sq. ft. built.

Fort Plain. Dockwall 300 ft. long built and area graded; warehouse with floor area of 3,200 sq. ft. built; one 2-ton timber derrick installed.

St. Johnsville. Dockwall 340 ft. long built and area graded.

Little Falls. Dockwalls 600 ft. long built and area graded; two freight-houses with combined floor area of 6,400 sq. ft. built; one 2-ton timber derrick, one 12-ton steel derrick and one auto-crane installed.

Herkimer. Dockwall 500 ft. long built and area graded; two warehouses with combined floor area of 2,080 sq. ft. built; one 2-ton timber derrick and one auto-crane installed.

Ilion. Dockwall 600 ft. long built and area graded; freight-house with floor area of 960 sq. ft. built; one 2-ton timber derrick installed.

Frankfort. Dockwall 300 ft. long built and area graded and paved; freight-house with floor area of 960 sq. ft. built; one 2-ton timber derrick installed.

Utica. Dockwall 1,160 ft. long built and area graded and paved; freight-house with floor area of 6,374 sq. ft. built; one 2-ton timber derrick and one auto-crane installed.

Rome. Dockwall 910 ft. long built and area graded and paved; freight-house with floor area of 6,150 sq. ft. built; one 2-ton timber derrick, one 12-ton steel derrick and one auto-crane installed.

Cleveland. Dockwall 150 ft. long built.

Brewerton. Dockwall 470 ft. long and mooring pier 1,010 ft. long available.

Syracuse. Under construction. Now available: Two piers 350 ft. by 100 ft., giving, together with bulkhead, 3,180 ft. of mooring length; freight-house with floor area of 5,980 sq. ft., and one auto-crane. Four 2-ton timber derricks delivered; rail connections with New York Central and D. L. & W. railroads pending.

Baldwinsville. Walls 690 ft. and 570 ft. long, respectively, available.

Weedsport. Wall 150 ft. long available.

Lyons. Dockwall 360 ft. long built, area graded and freight-house built.

Newark. Wall 650 ft. long available and area graded; freight-house with floor area of 1,680 sq. ft. built.

Palmyra. Wall 570 ft. long available and area graded.

Fairport. Wall 650 ft. long available and area graded.

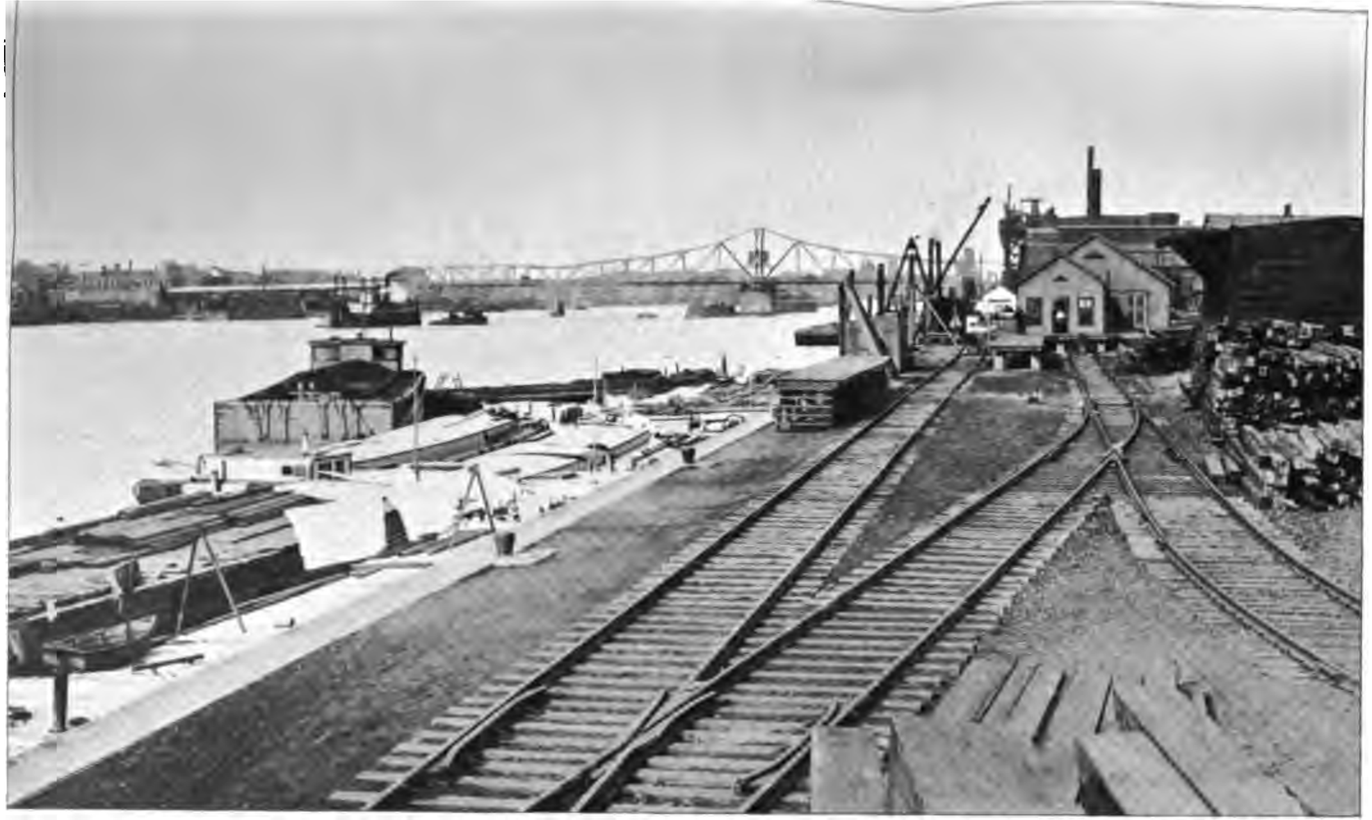
Pittsford. Wall 400 ft. long available and area graded.

Rochester. Under construction; temporary terminal on old canal used.

Spencerport. Wall 270 ft. long available with graded area; freight-house with floor area of 480 sq. ft. built; one timber derrick installed.

Holley. Wall 300 ft. long available; freight-house with floor area of 480 sq. ft. built.

Albion. Wall 400 ft. long available with graded area; freight-house with floor area of 1,600 sq. ft. built; one 2-ton timber derrick installed.



BARGE CANAL TERMINAL (LOWER) AT TROY

This terminal is the transfer station between the canal and New England points. The track at the left connects with the New York Central, that at the right with the Boston and Maine.

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Medina. Wall 490 ft. long available and area graded; freight-house with floor area of 1,680 sq. ft. built; one 2-ton timber derrick installed.

Middleport. Dockwall 250 ft. long built.

Lockport (Lower Terminal). Wall 1,000 ft. long available, area graded and paved; freight-house with floor area of 3,200 sq. ft. built; one 12-ton steel derrick and one auto-crane installed.

Lockport (Upper Terminal). Wall 720 ft. long available, area graded and paved; freight-house with floor area of 3,200 sq. ft. built.

North Tonawanda. Wall 910 ft. long available, area graded and paved; warehouse with floor area of 2,400 sq. ft. built; one 12-ton steel derrick installed.

Tonawanda. Wall 940 ft. long available, area graded and paved; freight-house with floor area of 2,500 sq. ft. built; one auto-crane installed.

Buffalo, Erie Basin. Under construction. Now available: Two piers 600 ft. by 150 ft. and 420 ft. by 150 ft., respectively; area paved; warehouse with floor area of 6,000 sq. ft.; one auto-crane.

Buffalo, Ohio Basin. Under construction.

Oswego Canal

Fulton. Wall 2,000 ft. long (800 ft. for dockage and 1,200 ft. for mooring) available.

Oswego (River Terminal). Wall 590 ft. long built.

Oswego (Lake Terminal). Pier 1,010 ft. by 150 ft. built; rail connections made; area paved.

Cayuga and Seneca Canal

Seneca Falls. Walls 1,200 ft. and 400 ft. long, respectively, available.

Ithaca. Wall 670 ft. long built.

EQUIPMENT PLANS

Studies have been made to determine the requirements for freight-handling machinery at the principal terminals and a tentative layout for equipping each of these places has been prepared. These equipments include 3-ton full portal and semi-portal revolving jib cranes, locomotive cranes, light and heavy duty stiff-leg derricks, package conveyors, burtoning devices, dock winches, capstans, battery trucks, carrying trucks, small tractor cranes and conveyor cranes. Ultimately nearly all of these machines except the small tractor cranes and certain locomotive cranes will be electrically operated.

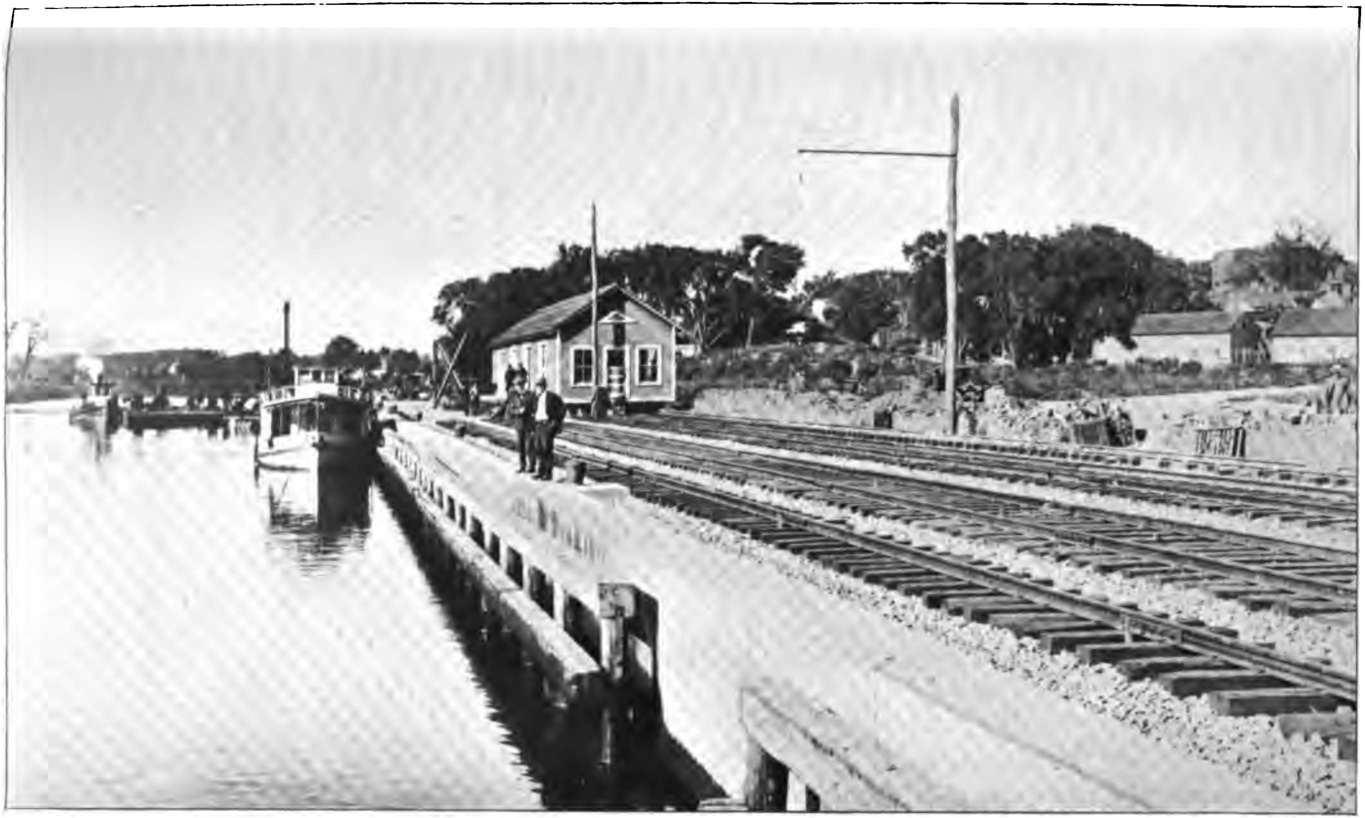
In selecting the equipment at each of the terminals where tentative plans have been worked out, consideration has been given to both the volume and the character of the prospective traffic. It may be some time before all these equipments are installed, but whatever machinery is placed in any particular terminal will be in conformity with the adopted tentative layout, unless experience and traffic development along some unexpected line dictate a change of plan.

Suitable electric installations are planned, so that the terminals may be lighted and the machinery supplied with power for operation.

The completion of the terminals is not as far advanced as I would have it, but their status is as favorable as it was possible to make it under prevailing conditions. All work during the past two construction seasons has had to be subordinated to the more important demands of the Federal Government, and its progress has suffered seriously in consequence. While this affected the up-State terminals to a considerable degree, it much more completely dominated the terminal situation in New York city.

At the terminal in Gowanus bay we are trying to construct a 1,200-foot pier with a depth of 35 feet of water alongside, to provide transfer facilities between canal barges and ocean-going vessels. Part of the site of this terminal has been occupied for over a year by the Navy as a place for storing coal barges to be used in coaling ships, and during the last two months the United States Transport Service of the Army has filled the balance of the available water area with barges, over which the State has no police control.

In the construction of the 700-foot pier at 53rd St., North



BARGE CANAL TERMINAL AT SCHENECTADY

Two railroad tracks and a front and a back crane rail are shown. The trolley wire enables the General Electric Co., the chief user of the Schenectady terminal, to run its cars directly from works to dock.

river, there was required considerable timber which had to be brought from the South. On several occasions this timber was commandeered in transit to be used in necessary government shipbuilding, involving long delays before replacements could be secured.

The work on the terminal at Newtown creek has been completed to a point which would permit of its use to a considerable extent except for the fact that it has no proper approach. The opening of this approach, which must be provided by the city, has been delayed by the fact that the French Government occupies one or more buildings on the line which the approach should properly follow and it appeared that this could not be disturbed. Negotiations for the opening of this approach were taken up by this Department two years ago.

At Rogers street, where there is a dock already existing, similar negotiations for an approach have not yet resulted in anything tangible having been accomplished. Because of difficulty in securing suitable waterside accommodations, the State has permitted the contractor constructing the subway under the East river at this point to occupy a portion of this terminal site.

The terminal at 138th St., Bronx, has been finished to a point which will enable us to undertake at once the work of grading and shed construction. At this terminal was experienced much difficulty due to harbor regulations made necessary by the military precautions covering the towing of excavated material to sea.

This Department is proud of the fact that 168 of its engineers gave their services to the military forces of the Government. These men were difficult and in some cases impossible to replace, and the designing staff of the Department as well as the construction staff has been sadly crippled.

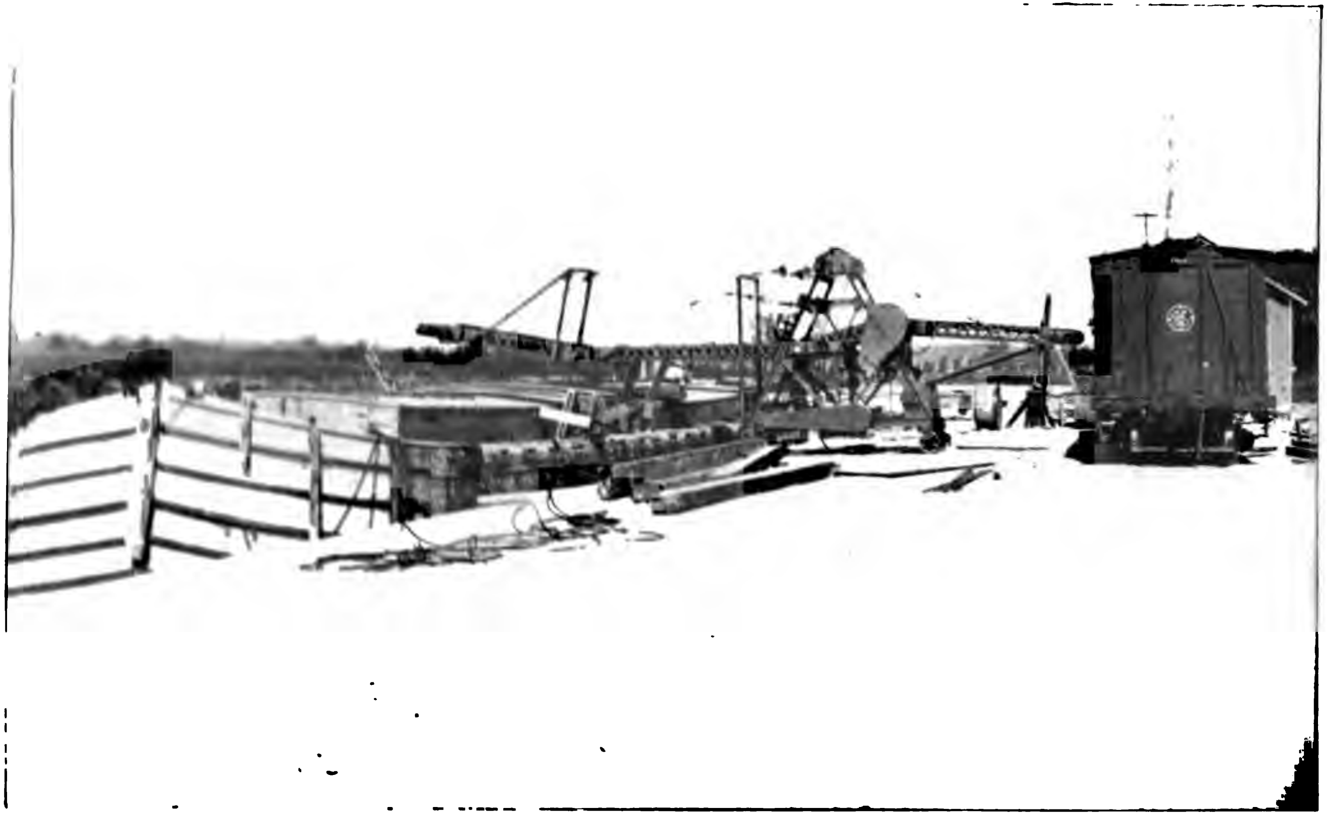
Work should have been begun at Flushing and at Hallett's Cove a year ago, but the best we can hope to do is to get it started this winter. Piers 5 and 6, East river, should have been equipped with sheds and machinery, but with the delays due to the necessity for priority orders we shall do well to have them fully equipped by this spring.

COMPLETION OF TERMINALS

The Legislature must squarely face the financial situation with reference to the terminals. At most of the principal points where terminals are located the terminal law laid down specific directions as to ultimate development, based on an estimate of cost made in 1910. This entailed construction which, because of the remarkable condition in the labor and material markets, cannot be completed within the appropriations provided. The operation of the so-called Walters Act (chapter 585, of the Laws of 1918) will also very seriously affect these appropriations. At several points, of which Troy and Rochester might be named as examples, the appropriations made are found to be entirely inadequate to provide for more than a very partial working development. With the funds available already expended or obligated, it will be impossible to secure at either of these points anything like a satisfactory result. At other places a similar condition will be found to exist. In New York city, as I have explained to you in previous reports, so many sites additional to those named in the law have been acquired by the State for terminals that it is extremely doubtful if the appropriations for terminals in New York city, after being drawn upon to pay for the high-priced property taken, would be available to more than partially complete their equipment. Some points on the canals, which have not been provided for under the law, are asking for canal terminal facilities. These cannot be granted unless appropriations for that purpose are made by you. I recommend that appropriations to permit of the development of Barge canal terminals to a point which will enable them to serve the purpose for which they were intended, be given consideration by you.

HUDSON RIVER CITIES

The Legislature of 1918 made an appropriation for purchasing Barge canal terminal sites at Poughkeepsie, Kingston, Newburgh and Yonkers and for preparing plans for terminal construction at these places. Preliminary surveys have been completed preparatory to acquiring the sites and making the plans. It is



PORTABLE PACKAGE-FREIGHT CONVEYOR

This conveyor may be used for both loading and unloading, and transfers packages between boat and freight-car, truck or warehouse. This view is at the Schenectady terminal and shows the tracks and pavement in place.

expected that these sites will be in the possession of the State before spring and appropriations should be made for developing them.

GRAIN ELEVATORS

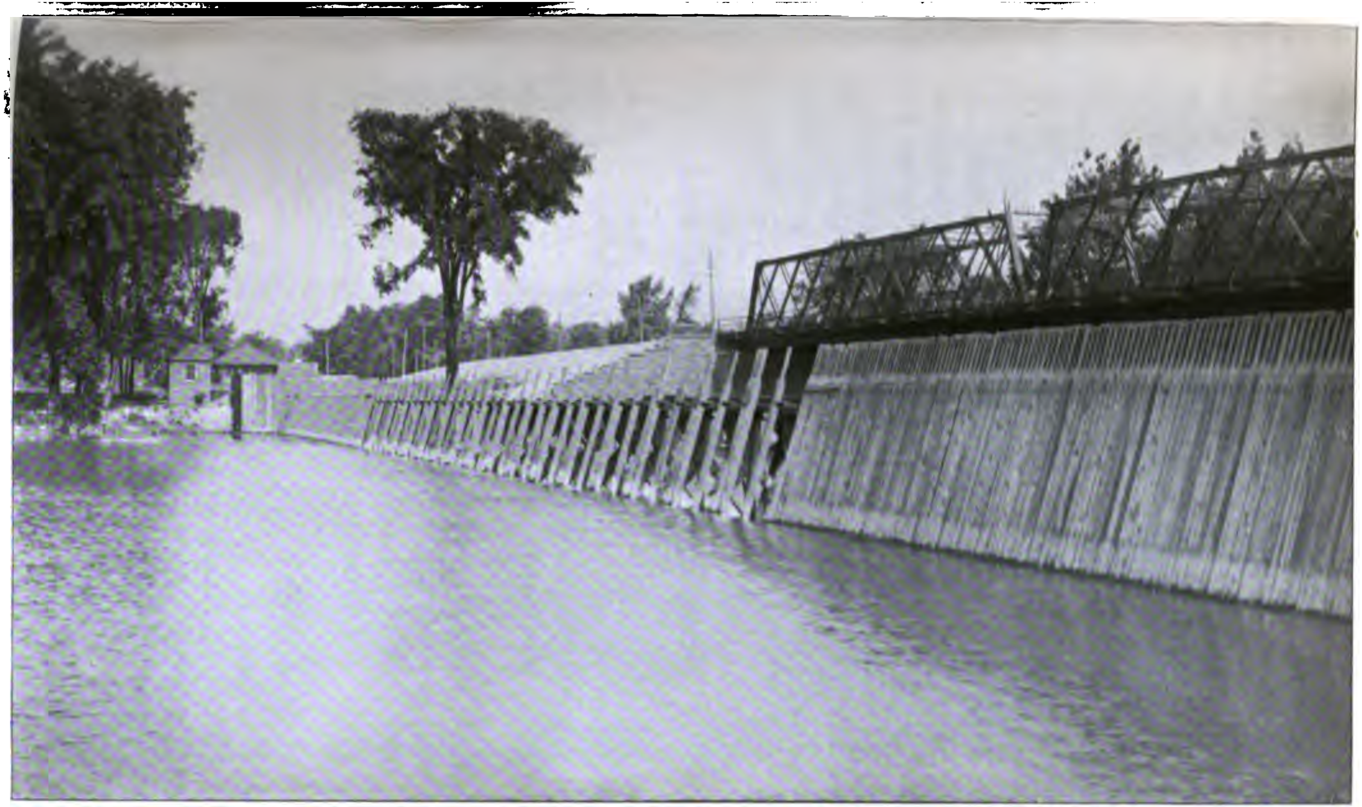
If the canal is to take a leading part in the carrying of grain, it is apparent that additional elevator capacity suitable to canal needs must be provided in New York harbor. The fact that from fifty to one hundred million bushels of wheat are received in Buffalo yearly, destined for the seaboard, indicates an opportunity on the part of the canal for its transportation.

The Barge canal terminal at Gowanus bay, Brooklyn, offers exceptional opportunity for the location of a grain elevator system with ample storage bins to provide for the transfer of grain from barge to ship. The State already is in possession of an area large enough to accommodate any reasonable development of this character. The terminal pier which is being constructed at this locality has been so planned that it can accommodate the necessary grain-carrying portions of an elevator system without requiring the strengthening of its foundations. Neither the Barge Canal Law nor the Canal Terminals Law makes any provision for the construction of elevators. This subject should be given careful attention by you and a determination reached as to the State's policy in this respect. Private enterprise can scarcely be expected to move, in view of the uncertainty as to the State's position.

WORK UNDER CHAPTER 585, LAWS OF 1918 (THE ACT FOR CANCELING CONTRACTS AND COMPLETING WORK UNDER WAR CONDITIONS)

In my last annual report to this body I called attention to war conditions as affecting the operations of the contractors and pointed out that in the face of certain heavy financial losses the majority of them had continued their work, and I recommended the passage of remedial legislation. The 1918 Legislature gave consideration to this matter and a bill was passed which, upon signature by the Governor, became chapter 585 of the Laws of 1918, entitled, "An act relating to contracts for the construction of public works."

Under authority of this act the Canal Board was empowered to cancel and annul contracts, in force at the time the act became a law, covering the construction of the Barge canal and its terminals entered into prior to April 6, 1917, or could cancel on certificate of the State Engineer that non-completion of a contract prior to April 6, 1917, was due to conditions and circumstances beyond the control of the contractor. The act further provides that in the event of the cancelation of a contract the unfinished work or any part of it may be completed under a new contract to be entered into with the former contractor at actual cost and expense or the completion of the unfinished work can be accomplished under the terms of a new contract prepared and advertised in the usual manner, or the State is empowered to complete the unfinished work with its own forces. In the event of the cancelation of any contract, the actual and necessary cost and expense to the contractor is to be determined from April 6, 1917, to the date of cancelation and he is to be paid the difference between such actual cost and expense and the amount he would have received for work performed at the contract prices established in his original contract. Applications were received from 29 contractors for the cancelation and annulment of contracts under the provisions of the law. Favorable consideration has been given 25 of these applications and the Canal Board has refused to cancel 3 contracts. No final action has been taken with respect to the remaining application. The intent of the act was specific and clear, that no profit should be allowed to the contractor for work performed between April 6, 1917, and the date of the cancelation of his contract, or for any work the contractor might be called upon to perform subsequent to the date of cancelation in completing unfinished work on the original contract. Realizing that this is somewhat unusual legislation and that by its terms practically complete responsibility was placed upon the State Engineer for its proper administration, I have given the matter much of my time and a great deal of thought and study. In order to assure myself as to the proper construction of the provisions of the law, I have called upon the Attorney-General from time to time for opinions covering certain points and have his rulings, in accordance with which I have acted. Such decisions as I have been



TEMPORARY DAM IN THE GENESEE RIVER

By means of this dam through Barge canal navigation across the whole state could be opened for the season of 1918. The permanent dam is under construction farther downstream.

called upon specifically by the act to make, I have made to the best of my ability, having in mind at the same time the interests of the State and fairness to the contractor.

In order to arrive at a determination of the actual and necessary cost and expense to the contractor for carrying on his work, it was necessary to examine and audit his books, and for that purpose, under authority of the Canal Board, I engaged the services of Lybrand, Ross Brothers & Montgomery, accountants and auditors of New York city, to make these necessary examinations. The certification to me of the results of such examinations, the opinions of the Attorney-General covering doubtful points in the law, and my own decisions on those points which the law has left to my sole determination, have enabled me to present to the Canal Board at its meeting on December 27, 1918, certificates for two contracts, and from the present progress of the work I anticipate that certificates on the remaining contracts can be fully completed and presented within the next two months.

SALE OF ABANDONED CANAL LANDS

In both the preliminary Barge canal estimate and the law authorizing construction, a provision was included for selling canal lands no longer of use for canal purposes and applying the proceeds to the cost of construction. The time has now come when such action is in order.

Already the old canal lands in the city of Schenectady have been sold and the sale was conducted in such a manner as greatly to benefit the State. The greater part of the land was purchased by the city, which thus secured a much-needed site for a boulevard. The prices obtained for the lands were concededly fair for both the State and the buyers. The city's portion brought $248,791.00, while that secured by the General Electric Company sold for $97,397.00 and the part taken by the American Locomotive Company and the Delaware and Hudson Railroad Company added $36,018.00. By this sale the State has escaped the necessity of maintaining bridges and of draining the old canal bed and keeping it in a sanitary condition subject to Board of Health regulations. A condition of the sale was that the State was relieved of any obligations growing out of any encroachment litigation that may arise. It was possible to employ authoritative maps and descriptions of the lands because of the " Blue Line Surveys " made by this Department under special appropriation.

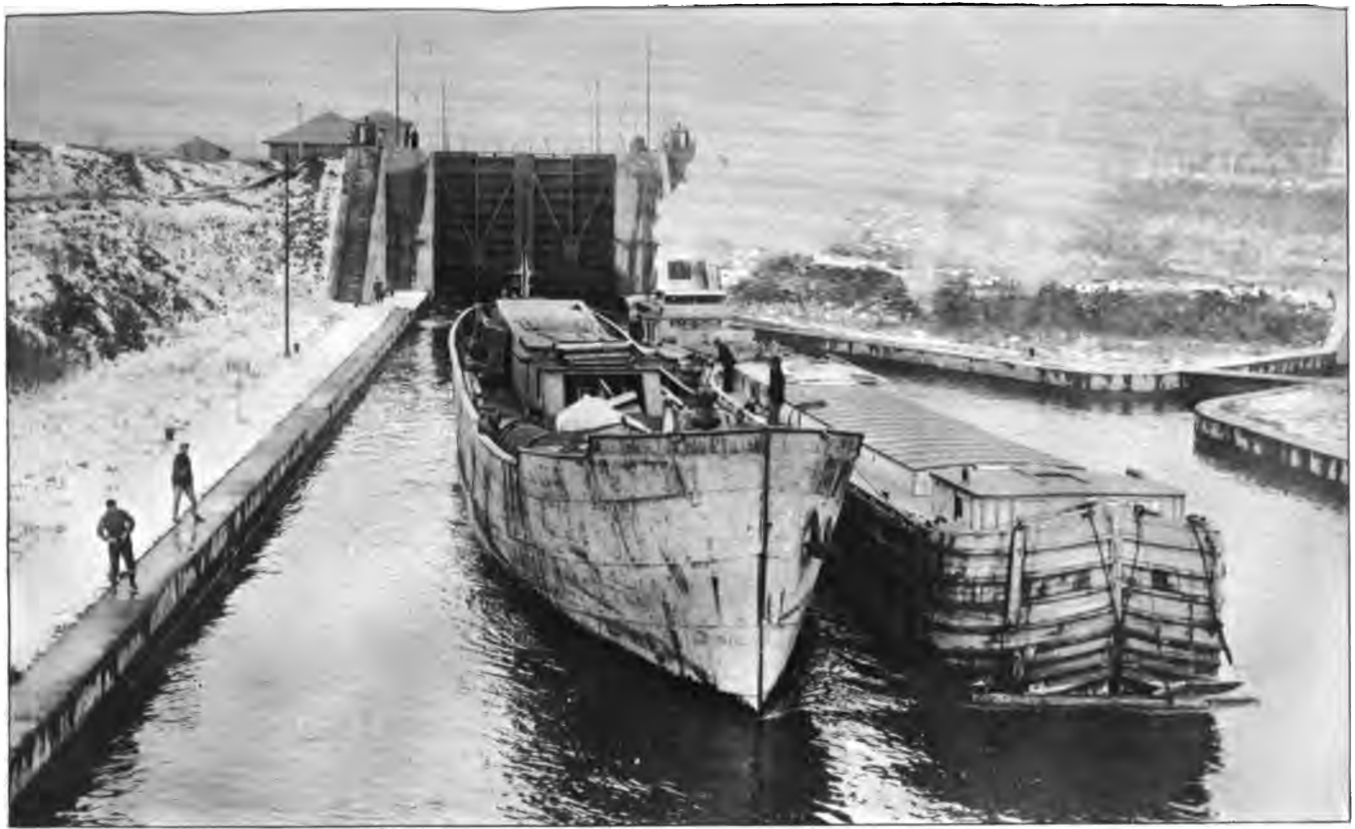
It is the purpose of the Canal Board to dispose of abandoned canal lands as fast as possible. However, it is not intended to sell isolated parcels, but to conduct the sales in such a way that long stretches are almost certain to find purchasers at one time. This prevents leaving in the hands of the State isolated parcels which carry with them responsibilities of draining, etc. A plan has been adopted for receiving at public sale offers on single parcels and also on a group of adjacent parcels, the State reserving the right to accept the more advantageous offer. The Land Board has no organization for looking after and protecting any land which may come under its jurisdiction. The Superintendent of Public Works has such an organization. Until the old canal lands are taken over by the Land Board for disposal, they are under the control of the Superintendent of Public Works. Accordingly the Land Board does not assume control of these lands until it is nearly ready to conduct a sale.

INDUSTRIAL SITES ALONG CANAL

The abandoned canal lands furnish some excellent sites for industrial plants. In general this property is near the new canal and a plant located upon it may enjoy the benefits of water transportation. In most localities also railroads are near by. If legislative provision is made to sell the surplus water-power that is available at canal structures, there will be presented another incentive for locating factories on old canal lands.

PLANTING OF TREES ON CANAL LANDS

There are a number of areas adjacent to the new canals which were appropriated for the purpose of finding room for the disposition of excavated material taken from the channel. In a few cases reconveyances of such appropriations have been made to the former owners. In the majority of cases, however, it is not



A STEAM TRAWLER PASSING THROUGH THE BARGE CANAL

This vessel was built at a Great Lakes shipyard and was transported through the canal for service on the ocean.

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deemed wise for the State to part with the ownership for the reason that they may come into use at almost any time for the deposit of material taken from the channels in the course of maintenance. In many cases the former owners would not accept a reconveyance of an altered property and a conveyance to a third party would not yield the State a compensation considered at all adequate. Much of this property is also in small parcels and of such irregular shape as to be of no particular value to a private owner. I would suggest to you therefore the desirability of planting trees on such areas as are adapted to such tree-planting and on which the existence of trees would not be detrimental in any way to the operation of the canal. It is possible that in the course of maintenance a small proportion of such trees might be destroyed, but the probability is that the majority might never be disturbed. Much of the land on which the excavated material has been placed was originally excellent river farm land, which has now been covered by sand, gravel, clay or disintegrated rock to a depth of three or four feet. The underlying soil should prove advantageous to the growth of trees, once their roots have struck into it. Such tree-planting might well be done under the direction of the Superintendent of Public Works with the advice of the Conservation Commissioner.

BLUE LINE SURVEYS

During the past year not so much progress has been made in surveying and mapping the boundary lines of the old canal as had been anticipated. A shortage of men has been experienced in engineering as well as in other kinds of work and this Department could not get as many men as it needed. It was necessary to curtail work along certain lines and it seemed that the blue line surveys would suffer least by the delay.

More time is needed to make the surveys than was thought necessary at first, and the reason for this is that it has been found advisable to prepare the land for sale by subdividing it into parcels which correspond in general with adjacent property lines, or into parcels on which the sales will probably be made. The surveys are now progressing on this basis.

The blue line work on the Eastern Division is nearly completed, while that on the Middle Division is well advanced, but on the Western Division little has been done. It is necessary to complete these surveys, since the sale of old canal lands depends on them. I recommend that $45,000 be appropriated this year for continuing the work. With an appropriation of this amount, together with the unexpended balance of last year's fund, it is hoped to put on a sufficiently large force to substantially complete the work during the coming fiscal year.

SPECIAL CONSTRUCTION AND SURVEYS

Pieces of construction work, other than Barge canal, which have been under the supervision of the State Engineer during the year are the following:

Eighteen-Mile creek culvert (chapter 626, Laws of 1917).
Whitesboro street bridge, Rome (chapter 753, Laws of 1917).
Canandaigua harbor dockwall (chapter 756, Laws of 1917).
Ellicott creek improvement (chapter 624, Laws of 1913, and amendatory acts).
Hertel avenue bridge, Buffalo (chapter 761, Laws of 1917).
Cowaselon creek improvement (chapter 781, Laws of 1917).
Lake street bridge, Geneva (chapter 351, Laws of 1918).
Repairing sea-walls, Orient Point, L. I. (chapter 428, Laws of 1918).

Special surveys — including in some cases the preparation of plans — have been made as shown in the following tabulation. This list is exclusive of boundary line surveys and also of surveys made for other departments and commissions.

Proposed Barge canal branch to Auburn (chapter 376, Laws of 1917).
Tonawanda creek at Batavia (chapter 453, Laws of 1917).
Great Western Gateway bridge at Schenectady (chapter 735, Laws of 1917).
Location for bridge between Crescent and Rexford (chapter 742, Laws of 1917).
Canal route between Tonawanda and Buffalo (chapter 743, Laws of 1917).

Limestone creek improvement (chapter 339, Laws of 1918).
Yorkville bridge approach (chapter 752, Laws of 1917).
Glen, or Mill creek improvement, Watkins (chapter 341, Laws of 1918).
Dive culvert, Rome (chapter 346, Laws of 1918).
Eighteen-Mile creek improvement (chapter 425, Laws of 1918).
Mill river improvement (chapter 427, Laws of 1918).
Hudson river terminal sites at Poughkeepsie, Kingston, Newburgh and Yonkers (chapter 555, Laws of 1918).

In the past it has often happened that the Legislature has made an appropriation for the improvement of a certain stream and has followed this subsequently with appropriations for other portions of the same stream, but each appropriation has been made without any definite plan to make the several improvements parts of a predetermined and well-considered whole. Some of the special surveys of the past year have been made in accordance with an intent to correct this error. The whole stream has been surveyed and a comprehensive plan has been prepared for its complete improvement. If the Legislature shall determine to improve this stream, but shall make an appropriation sufficient for only a part of the whole project, then the work may be carried on in a piecemeal but orderly manner, the end in view being the eventual accomplishment of the whole improvement. I would suggest to you the advisability of referring to this Department for a comprehensive survey of any project deemed worthy of consideration by you, making an initial appropriation for such survey before you attempt to make appropriation for the improvement itself. Such a course will enable you to inform yourselves of the amount of expenditure which will be involved in any particular complete project before you embark upon it.

BOUNDARY LINES

The State Engineer is directed by law to make periodic examinations of the boundary lines between New York and adjoining States. During the past year no such examinations have been made, but during the present year certain of the lines should be examined. Therefore I recommend that $1,000 be appropriated for this purpose.

However, during the year surveys have been partially or entirely made of three county boundary lines. Also three monuments placed by this Department in 1914 on another county line have been relocated above the water-line of a projected reservoir.

By chapter 559, Laws of 1918, a survey of a portion of the boundary line between the counties of Delaware and Schoharie was authorized. The line to be surveyed extended from the meeting point of Delaware, Greene and Schoharie counties at Schoharie creek to a point at Lake Utsayantha. This survey has been completed and the line has been properly monumented.

In accordance with the provisions of chapter 561, Laws of 1918, a survey was undertaken of the line which forms the boundary between the townships of Warrensburg and Luzerne, Warren county, by its eastern portion, and between Warren and Saratoga counties by its western portion. After an extended search it was decided that the line which this act desired to established was authorized and established by an act of March 12, 1772, and was defined as being a line running due west from Fort George. The intent of that act of 1772 was clearly the establishment of a line running due west according to magnetic bearing. From the best data available it was calculated that in 1918 the true bearing of this line would be approximately S. 83° W.

Because of the rough and wooded character of the country immediately west of Fort George and extending to the Hudson river, the survey was carried on by triangulation and followed the general computed westerly direction. Very little was found between Fort George and the Hudson river to indicate the line as originally established, and an extended search failed to locate authoritative points along the line westerly from the river or at the extreme west end of the line. There was found, however, a growth of blue-beech trees on the west bank of the Hudson river which is believed to be on the line. This was the best established point secured and the one nearest the calculated true line and was therefore accepted as a point on line. Then that portion of the line between Fort George and the Hudson river was established and monumented. Enough of the line was thus located to be of service in pending litigation, in which the State is particularly interested.

The law also required "That the State Engineer and Surveyor shall also locate the lines of grants, patents and allotments thereof adjacent to said town and county lines." To locate all these lines would be an almost endless task, and could not be completed even with the additional appropriation asked. None of this work was attempted except on that portion of the line, as established by this survey, between the towns of Warrensburg and Luzerne, where some of the lot lines of Jessup's patent immediately adjacent were tied into the town line.

The establishment of the line farther westward was not possible with the funds available. In order to make prompt use of points already established, now that the survey of this line has been started, I recommend an additional appropriation of $3,000 to finish this survey.

Chapter 562, Laws of 1918, is entitled, "An act to provide for establishing a portion of the north boundary line of the County of Ulster, and being a portion of the south boundary line of the County of Greene, and known as the north boundary line of Great Lot Number eight, Hardenburgh patent." The portion of this line which it was proposed to establish by this survey was that part which begins near the Ox Clove and runs northwesterly about nine miles.

When search was made for data to establish this line, it was found that the original line, establishing the north line of Great Lot No. 8, Hardenburgh Patent, extended from "Monument No. 14", on the east branch of the Delaware river, to a point known as "Monument No. 4," which is located somewhere near the Saw kill in the present town of Woodstock, Ulster county. "Monument No. 14" was located and was found to be well established. Such records as contain data regarding this line give a bearing southeasterly from this point. This bearing was followed. However, as the line was carried forward several points which were reputed to be on line were found not to be in the same line and it became necessary to carry the line forward to the location of "Monument No. 4". Consequently instead of about nine miles of line it has been necessary to carry the line about 30 miles.

Almost all of this is through wooded and mountainous country. Because of the difficulty of securing a positive location for "Monument No. 4" extensive search has been carried on for positive data on this point. It is now believed that its true location can be secured.

However, due to lack of funds the work has been discontinued and can be satisfactorily finished only when more money is made available. I recommend that an additional appropriation of $2,000 be made for completing this survey.

In 1914 a survey was made by this Department which located a portion of the boundary line between Greene and Schoharie counties. Three monuments on this line were placed at Schoharie creek about 1⅛ miles north of the Devasego Falls. Because of the intended flooding of the land at this point by the construction of a reservoir by the Board of Water Supply of the City of New York it became necessary to relocate these monuments on ground which is above the proposed new water-line. The work of relocating these three monuments has been done by the Board of Water Supply and they are now situated as described in an accompanying detailed report.

COURT OF CLAIMS SURVEYS

During the year this Department has continued its work of supplying the Attorney-General and the Claims Agent with maps and reports in aid of the preparation of evidence to defend the State in actions brought on account of claims for damages alleged to have resulted from the operation and maintenance of the old canal. I recommend that the sum of $5,600 be appropriated for the continuation of this work during the present year.

COOPERATION WITH FEDERAL SURVEYS

For years New York State has coöperated with the Federal Government in carrying on the United States Geological Survey, in both hydrographic and topographic work. I recommend that the usual amount of $2,500 be appropriated as the State's share for the stream gaging work for the ensuing year. This is a very important work and an uninterrupted continuity is one of its essential requirements.

MISCELLANEOUS SURVEYS

The surveys which this Department has made for other State departments have been numerous. They include surveys for the Troy armory, the Malone armory, the Schuyler mansion at Albany, the State office building at Albany, the Marcy State hospital, the Middletown State hospital, the West Haverstraw State hospital, Dannemora prison, the Craig Colony at Sonyea (a survey of 1,900 acres, requiring six months to make), Kings Park hospital on Long Island (including plans for a concrete reservoir) and Wards Island at New York. These surveys were paid for out of the fund which is made available for this purpose.

The Department has also made surveys at the request of other departments, but in these cases the cost has been borne by the department making the request. These pieces of work were at Wingdale prison, for which plans for a dam and reservoir were made and the grading of the building area supervised; at the Quarantine Station at Hoffman Island, for which repairs to the landing pier were supervised; and in connection with an outer belt line to connect all the railroads entering New York city from the west. This latter survey, which has been begun but recently, was undertaken at the request of the New York-New Jersey Port and Harbor Development Commission.

I recommend that the sum of $10,000 be again appropriated for the surveys which the State Engineer is called upon to make for other State departments and commissions.

LAND GRANTS

By an act of 1917 the State Engineer is charged with the duty of making investigations to determine whether all the conditions have been carried out under which grants have been made by the Land Board. Report is made to the Attorney-General, who, if occasion demands, may bring action to annul the grants. There have been made 442 reports by the State Engineer under authority of this law. To carry on these investigations and to make the necessary corrections and additions to the official maps, I ask that $4,000 be appropriated.

DEPARTMENT MEN WITH THE COLORS

The engineer occupies a very important place in modern warfare. It is with the feeling of justifiable pride that I call your attention to the number of men in the State Engineer's Department who responded to the call to arms and entered the military establishment of the United States. Of the 600 members of this Department 168 were so enrolled. While naturally a large part of this number found its way into the engineering regiments, this Department was represented in almost every branch of service both on land and sea.

I append herewith a list giving the names of those who entered the military service and I do this both as a matter of information to you and also with the feeling that this may serve as a permanent record.

HONOR ROLL, DEPARTMENT OF STATE ENGINEER

Preceding the names appear the respective ranks of the men while in the Department.

Junior Asst. Engr.	J. M. Angus	1st Lieut	302d Field Artillery
Assistant Engineer.	A. G. Austin	1st Lieut	472d Engineers
Junior Asst. Engr.	R. W. Austin	1st Lieut	Chemical Gas Service
Junior Asst. Engr.	M. L. Babcock	Ensign	U. S. Naval Reserve
Junior Asst. Engr.	Leroy Bamer	Private	Medical Corps, Casual Detachment
Laborer	F. S. Barclay	Private	303d Engineers
Junior Asst. Engr.	J. S. Bierhardt	2d Lieut	U. S. Air Service
Engineering Asst.	E. M. Birdsall	Private	Section 532, Ambulance Service
Junior Asst. Engr.	J. F. Blaise	Candidate for Commission	Officers Training Camp. Honorably discharged
Engineering Asst.	A. W. Bischel	Corporal	303d Engineers
Junior Asst. Engr.	J. H. Bovier	Private	303d Engineers
Junior Asst. Engr.	L. J. Bradley	Sergeant	29th Engineers
Messenger	W. E. Brower	Private	28th Battalion. U. S. Guards
Engineering Asst.	Ernest Budlong	Private	Tank Service
Engineering Asst.	E. J. Bullis	1st Lieut	31st Field Artillery
Assistant Engineer.	O. L. Burdett	Captain	25th Engineers
Junior Asst. Engr.	W. F. Burke	Seaman, 2d Class	7th Regiment, U. S. Naval Reserve
Engineering Asst.	Gail Bowler	Bugler	Chemical Warfare Ser.
Laborer	W. H. Benson	Private	387th Co., U. S. Marines
Assistant Engineer.	R. D. Cameron	Private	Engineers Officers Training Camp
Junior Asst. Engr.	J. J. Carroll	Private	5th Army Corps Headquarters
Junior Asst. Engr.	M. J. Chryst	Sergeant	Coast Artillery Training Camp

Assistant Engineer	H. L. Clarke	1st Lieut	28th Engineers
Junior Asst. Engr.	E. A. Close	Corporal	348th Infantry
Confidential Asst.	G. W. Codwise	Ensign	U. S. Naval Reserve
Stenographer	W. L. Collins	2d Lieut	12th Field Artillery
Junior Asst. Engr.	L. H. Coit	Corporal	20th Engineers
Junior Asst. Engr.	C. M. Colony	Captain	Quartermaster's Dept.
Junior Asst. Engr.	F. S. Corey	Sergeant	51st Pioneer Infantry
Junior Asst. Engr.	A. J. Crowe, Jr.	Sergeant	Engineers' Candidates School
Junior Asst. Engr.	J. F. Cullen	Private	303d Engineers
Junior Asst. Engr.	T. L. Curtin	Private	Aero Photo Division
Assistant Engineer	C. R. DeGraff	1st Lieut	Engineers Officers Training School
Junior Asst. Engr.	B. S. Davenport	1st Lieut	Coast Art. Res. Corps
Junior Asst. Engr.	W. A. Dawson	Private	303d Infantry. Honorably discharged
Laborer	H. E. Dayton	Private	302d Engineers
Boatman	H. S. Deal	Corporal	23d Engineers
Inspector	L. W. Donnelly	1st Lieut	328th Field Artillery
Junior Asst. Engr.	J. T. Doris, Jr	Sergeant	302d Engineers
Junior Asst. Engr.	E. E. R. Dornbach	Sergeant	309th Infantry
Junior Asst. Engr.	L. W. Douglas	Sergeant	23d Engineers
Assistant Engineer	J. B. Doyle	Major	513th Engineers
Junior Asst. Engr.	L. A. Denner, Jr	Private	51st Pioneer Infantry
Junior Asst. Engr.	J. J. Dunne	Corporal	U. S. Employment Service Infantry
Junior Asst. Engr.	J. F. Egan	Sergeant	17th Training Battery, Field Art., C. O. T. S.
Junior Asst. Engr.	Roy Engell	Corporal	303d Engineers
Laborer	R. J. Evers	Private, 1st Class	306th Ambulance Co.
Junior Asst. Engr.	L. E. Fields	Corporal	25th Engineers
Engineering Asst.	E. E. Fobes	Private	29th Engineers
Junior Asst. Engr.	J. H. Friedman	Sergeant	Utilities Detachment Q. M. C.
Stenographer	W. D. Gartland	Private	Quartermaster's Corps
Junior Asst. Engr.	J. A. Galvin	1st Lieut., Engrs.	Army General Staff College
Junior Asst. Engr.	L. P. M. Gaylord	Private	23d Engineers
Laborer	J. F. Gilbert, Jr	Private	U. S. Marines
Assistant Engineer	G. Edward Gibson	Lt.-Colonel	Infantry, U. S. Reserve Corps, Officers Training Camp. Honorably discharged
Engineering Asst.	H. H. Glosser	Bugler	56th Engineers
Laborer	R. J. Golding	Private	336th Field Artillery
Boatman	Lawrence Goodman	Private, 1st Class	3d Air Sevice Mechanics
Junior Asst. Engr.	A. E. Green	1st Lieut	351st Field Artillery
Junior Asst. Engr.	LeRoy Greenalch	Warrant Officer	U. S. Naval Reserve
Engineering Asst.	H. G. Gunther	Quart'rm'r, 1st Class	U. S. Navy, Aviation
Engineering Asst.	W. R. Glock	Private	6th Ord. Guard Co.
Assistant Engineer	H. W. Hale	1st Lieut	Engrs. Reserve Corps, Officers Train. Camp. Honorably discharged
Assistant Engineer	B. I. Hall	Captain	303d Engineers
Boatman	J. W. Hano	Sergeant, 1st Class	Evacuation Hospital, No. 3
Engineering Asst.	C. L. Hawkins	2d Lieut	19th Battalion, Field Artillery
Assistant Engineer	T. R. Hazelum	1st Lieut	212th Engineers

Junior Asst. Engr.	H. W. HENDERSON	Private	107th Infantry
Senior Asst. Engr.	E. D. HENDRICKS	Captain	303d Engineers
Junior Asst. Engr.	W. J. HENRY, Jr	2d Lieut	Engineers
Engineering Asst.	H. F. HENSLER	Private	303d Engineers. Honorably discharged
Junior Asst. Engr.	C. E. HEYDT	Private	106th U. S. Ambulance Co.
Assistant Engineer	R. L. HOLT	Captain	Engrs. Reserve Corps, Officers Train. Camp. Honorably discharged
Engineering Asst.	E. L. HORTON	Private, 1st Class	102d Engineers
Junior Asst. Engr.	H. R. HORTON	Cadet Officer	U. S. Naval Reserve
Junior Asst. Engr.	R. M. R. HOWARD	Private, 1st Class	26th Engineers
Engineering Asst.	P. M. HOWE	Sergeant	309th Heavy Artillery
Engineering Asst.	SAUL HURST	Seaman	Naval Reserve Corps
Junior Asst. Engr.	N. D. HYDE	2d Lieut	Headquarters, 29th Division
Junior Asst. Engr.	J. S. HYMAN	Private	472d Engineers
Engineering Asst.	George HINDS	Private	2d Casual Co.
Senior Asst. Engr.	L. S. HULBURD	Captain	Engineers O. T. S.
Engineering Asst.	JOS. HOEHLEIN	Private	30th Co., Coast Art.
Junior Asst. Engr.	E. L. KEELER	Captain	153d Engineers
Assistant Engineer	G. D. KELLOGG	Captain	552d Engineers Service Battalion, Construction Division
Assistant Engineer	B. T. KENYON	Captain	Quartermaster's Corps
Junior Asst. Engr.	C. F. KEALE, Jr	2d Lieut	Air Service, Mil. Aero
Junior Asst. Engr.	W. G. KEESHAN	Private	2d Pioneer Infantry
Junior Asst. Engr.	H. C. KELLY	Corporal	102d Engineers
Engineering Asst.	H. F. KINNEY	Private	346th Infantry
Laborer	HENRY KLING	Quart'rm'r, 3d Class	7th Div., Naval Auxiliary Reserve
Laborer	E. R. KRAPF	Driver	Red Cross Ambulance
Junior Asst. Engr.	MICHAEL KOVAR	Private, 1st Class	335th Machine Gun Battalion
Junior Asst. Engr.	T. R. KERSLAKE, Jr.	Sergeant	25th Engineers. Died at Camp Devens, March 5, 1918
Junior Asst. Engr.	JACOB LABISHINER	Private	Meteorological Sect., Signal Corps Aviation
Junior Asst. Engr.	J. F. LARNEY	Private	308th Infantry
Junior Asst. Engr.	J. P. LARSON	2d Lieut	7th Engineers Train and Replacement
Junior Asst. Engr.	W. M. J. LEWIS	Private	Co. A, 2d N. Y. Infantry. Honorably discharged
Laborer	W. B. LOUNSBERY	Private	26th Engineers
Engineering Asst.	W. F. LYSETT	Corporal	515th Motor Truck Co.
Engineering Asst.	SOLOMON LEIBOWITZ	Private	Field Hospital No. 1
Junior Asst. Engr.	D. B. LYNCH	Private	312th Engineers
Private Secretary to State Engineer	L. D. MCCORMAC	Sergeant, 1st Class	Headquarters American Air Service
Junior Asst. Engr.	C. T. MCLEAN	2d Lieut	Quartermaster's Corps
Junior Asst. Engr.	F. J. MCMAHON	Private	21st Co., Coast Art.
Laborer	G. F. MARCOUX	Private, 1st Class	Medical Corps
Junior Asst. Engr.	A. J. MANTICA	Sergeant	25th Engineers
Laborer	P. L. MATTIMORE	Private	26th Engineers
Junior Asst. Engr.	ALLEN MATTISON	Private	20th Engineers

Junior Asst. Engr..	Charles Messina.....	Machinist's Mate, 1st Class	United States Naval Reserve
Engineering Asst...	E. J. Moran..........	Private, 1st Class	102d Trench Mortar Battery
Engineering Asst...	Parnell Moroney....	Corporal.....	225th Aero Squadron
Junior Asst. Engr..	J. E. Morrell........	Private.......	26th Engineers
Engineering Asst...	W. E. Mullen........	Private.......	302d Engineers
Assistant Engineer.	J. T. Murphy........	Private.......	National Army, Detached. Honorably discharged
Junior Asst. Engr..	W. R. Miller........	Chief Machinist's Mate	U. S. Naval Reserve
Junior Asst. Engr..	G. C. Nash...........	Lieutenant....	Coast Artillery
Assistant Engineer.	J. P. Newton.........	Captain, Engrs.	Base Hospital Construction
Engineering Asst...	J. C. Nolan..........	Private, 1st Class	25th Engineers
Engineering Asst...	G. W. Nostrand......	Seaman, 1st Class	U. S. Naval Reserve
Laborer..........	F. J. Norton.........	Private.......	Students Army Training Camp
Junior Asst. Engr..	C. V. O'Malley......	1st Lieut.....	Engineers O. T. S.
Assistant Engineer.	H. J. O'Neill........	1st Lieut.....	U. S. Engineers
Junior Asst. Engr..	Mott Palmer........	1st Lieut....	Co. 4, Engineers Officers Training Camp
Senior Asst. Engr..	E. V. R. Payne.......	Lt.-Colonel...	25th Engineers
Laborer..........	C. P. Plummer.......	Private.......	331st Tank Corps
Engineering Asst...	R. S. Pollard........	Private.......	23d Engineers
Assistant Engineer.	J. M. Prior..........	Corporal.....	U. S. A. (Special Ser.).
Engineering Asst...	E. D. Pieri...........	Seaman, 2d Class	U. S. Navy Students Army Training Camp
Laborer..........	C. F. Reule..........	Landsman Machinist's Mate	9th Regiment Aviation
Engineering Asst...	E. C. Reusswig.......	Private.......	23d Engineers
Stenographer......	J. L. Richards........	Stenographer..	310th Aero Squadron. Died in service, England, Oct. 15, 1918
Junior Asst. Engr..	H. S. Roberts........	Sergeant......	56th Engineers
Junior Asst. Engr..	D. D. Rogers........	2d Lieut......	Quartermaster's Reserve Corps
Junior Asst. Engr..	F. C. Rogers.........	Captain......	U. S. Engineers
Engineering Asst...	G. A. Rogers.........	Corporal......	303d Engineers
Clerk.............	G. W. Ruso..........	Sergeant.....	51st Pioneer Infantry
Engineering Asst...	Thos. Ryan, Jr........	Private.......	26th Engineers
Assistant Engineer.	E. G. Raynor........	Captain......	Engineers Officers Training Camp
Junior Asst. Engr..	W. W. Redfern......	Private.......	71st Infantry
Engineering Asst...	J. J. Raduciner......	Private.......	Students Army Training Camp
Assistant Engineer.	Solomon Reswick....	1st Lieut.....	Engrs. Reserve Corps, Officers Train. Camp. Honorably discharged
Engineering Asst...	Daniel Scanlon......	Private.......	Photo Division, Air Ser.
Assistant Engineer.	E. G. Seaman.........	1st Lieut.....	Engrs. Reserve Corps, Officers Train. Camp. Honorably discharged
Laborer..........	J. W. Shook..........	Sergeant.....	379th Infantry
Engineering Asst...	F. M. Sisson.........	Sergeant.....	57th Engineers
Boatman.........	A. A. Snell..........	Private.......	303d Infantry
Stenographer......	L. R. Spencer........	Sergeant......	Headquarters 152d Brigade Infantry

Engineering Asst.	I. N. Steigman	Private	Air Service
Laborer	E. R. Stoll	Ordinary Seaman	U. S. Coast Guard
Junior Asst. Engr.	W. C. Strecker	Private, 1st Class	29th Engineers
Engineering Asst.	T. M. Strohmenger	Private, 1st Class	Q Squadron, 1st Unit, Air Service
Assistant Engineer.	C. H. Swick	Captain	U. S. Engineers
Junior Asst. Engr.	H. C. Smith	1st Lieut	Engineers Officers Training Camp
Engineering Asst.	E. A. Terrell	Private	102d Engineers
Junior Asst. Engr.	J. R. Tighe	2d Lieut	165th Depot Brigade
Junior Asst. Engr.	H. R. Topping	2d Lieut	Coast Artillery
Engineering Asst.	T. J. Torpey, Jr	Corporal	102d Engineers
Laborer	E. S. Traver	Sergeant	519th Engineers
Junior Asst. Engr.	L. E. Turpit	Private, 1st Class	310th Fire and Guard Co. Q. M. Corps
Stenographer	J. J. Tobin	Army Field Clerk	Personnel Division, Adjutant-General Dept.
Junior Asst. Engr.	C. E. Vedder	Corporal	303d Engineers
Junior Asst. Engr.	J. J. Waddell	Chief Machinist's Mate	U. S. Naval Reserve
Junior Asst. Engr.	Powell Wall	2d Lieut	Signal Corps, U. S. A.
Junior Asst. Engr.	S. E. Whitney	Corporal	Trade Test Board, U. S. Air Service
Division Engineer	George D. Williams	Captain	548th Engineers
Engineering Asst.	E. M. Wilcox	Apprentice Seaman	U. S. Naval Reserve Students Army Training Camp
Laborer	G. H. Yerkes	Mechanic	108th Infantry. Killed in action, September 29, 1918
Laborer	S. A. Zierak	Sergeant	303d Infantry
Junior Asst. Engr.	W. J. Zabel	Sergeant	153d Engineers

APPENDED REPORTS

The usual reports are hereto appended. First come the tables giving summaries of engineering expenses. These are followed by tables of contracts, both those completed during the fiscal year and those in force at its close. Subsequently appear the reports of the three Division Engineers. These recount the progress made during the year in the various works of engineering and construction carried on in the Department, the chief of which has been the building of the Barge canal and its terminals. Besides containing the detailed accounts of work done, these reports are supplemented by tables showing engineering expenses on the several divisions and the status of contracts in force during the fiscal year. Other appended reports are those relative to the county line surveys and others made by the engineers of this Department who are in charge of the Testing Laboratory, the Land Bureau and the Stream Gaging.

ACKNOWLEDGMENTS

The past year, particularly the early part of it, has been a trying one in many ways. The very vigorous effort made to open the canal in the face of the difficulties which presented themselves required the utmost effort on the part of the employees of this Department, and the fact that a considerable proportion of my engineering force was in the military service threw upon those left behind an additional burden, which they carried cheerfully. For this spirit of coöperation I desire to express my gratitude and appreciation.

The assistance of the Department of Public Works has been of great value in opening the canal and in the steps which had to be taken to insure that opening. The official relations between the two departments have been most agreeable and I desire to express my thanks for the assistance at all times rendered me by the Superintendent of Public Works, Major General W. W. Wotherspoon.

The Canal Board has been at all times faithful to its obligations, regular in its attendance at the many meetings necessary to be held, and, with a comprehensive grasp of the canal situation, ready to formulate and assist in carrying out such measures as were for the benefit of the canal.

Respectfully submitted,

FRANK M. WILLIAMS,

State Engineer and Surveyor.

Engineering Expenses for the Fiscal Year Ended June 30, 1918

Table of Contracts Completed During the Fiscal Year Ended June 30, 1918

Table of Contracts Pending June 30, 1918

Summary of Construction Work, Barge Canal and Terminals, by Years

Engineering Expenses for the Fiscal Year Ended June 30, 1918

Ordinary Repairs to Canals

WORK	Act		Division	Amount	Total
	Chap.	Year			
Erie canal	181	1917	Eastern	$6,594 88	$10,000 00
Champlain canal	181	1917	Eastern	3,405 12	
Erie canal	181	1917	Middle	$9,633 69	9,964 88
Black River canal	181	1917	Middle	331 19	
Erie canal	181	1917	Western	$10,000 00	10,000 00
Total					$29,964 88

Construction of Barge Canal

WORK	Act		Division	Amount	Total
	Chap.	Year			
Head office account	147	1903*	Eastern	$193,755 10	$325,378 09
Erie canal	147	1903*	Eastern	87,868 12	
Champlain canal	147	1903*	Eastern	43,754 87	
Erie canal	147	1903*	Middle	$80,161 51	115,948 02
Oswego canal	147	1903*	Middle	16,287 56	
Cayuga and Seneca canal	391	1909*	Middle	19,498 95	
Erie canal	147	1903*	Western	$171,566 55	171,566 55
Total					$612,892 66

Construction of Barge Canal Terminals

WORK	Act		Division	Amount	Total
	Chap.	Year			
Eastern division account	746	1911*	Eastern	$128,037 62	
Middle division account	746	1911*	Middle	21,364 65	
Western division account	746	1911*	Western	23,914 70	
Total					$173,316 97

* And amendatory laws.

Bridge Designers, Engineers, etc.

WORK	Act		Division	Amount	Total
	Chap.	Year			
Bridge designers, engineers, etc....	181	1917	Eastern	$1,969 58	$1,969 58

Special Work

WORK	Act		Division	Amount	Total
	Chap.	Year			
High street bridge, Cohoes........	181	1917	Eastern....	$158 84	
Sea-wall, Orient Point, L. I.......	428	1918	Eastern....	22 78	$181 62
Yorkville bridge.................	752	1917	Middle	$309 55	
Whitesboro street bridge, Rome...	753	1917	Middle	60 75	
Lyons Falls bridge...............	246 699 728	1913 1915 1915	Middle.....	398 96	
Cowaselon creek improvement.....	781	1917	Middle.....	980 85	
Limestone creek improvement.....	751	1917	Middle.....	182 06	
Minetto bridge..................	716	1915	Middle.....	1,532 48	
Canandaigua lake dredging........	756	1917	Middle.....	152 40	3,617 05
Canisteo river improvement.......	750 728 181	1913 1915 1917	Western....	$41 27	
Chadakoin river improvement.....	758 728 181	1913 1915 1917	Western....	1,181 86	
Ellicott creek improvement.......	624 728 181 760	1913 1915 1917 1917	Western....	63 68	
Hertel avenue bridge, Buffalo.....	761	1917	Western....	474 22	
Eighteen-Mile creek culvert, Lockport........................	181 626	1917 1917	Western....	133 79	
					1,894 82
Total......................	......	......	....	....	$5,693 49

Special Surveys

WORK	ACT		Division	Amount	Total
	Chap.	Year			
Blue line surveys	181	1917	Eastern	$28,275 78	
Location of bridge between Crescent and Rexford	742	1917	Eastern	399 00	
Schenectady-Scotia bridge	735	1917	Eastern	11,493 54	
State boundary line	181 151	1917 1918	Eastern	1,316 49	
Delaware-Schoharie county boundary line	559	1918	Eastern	624 45	
Saratoga-Warren county boundary line	561	1918	Eastern	523 20	
Hydrographic survey	181	1917	Eastern	1,867 74	$44,500 20
Blue line surveys, Erie canal	646 181	1916 1917	Middle	$11,812 83	
Blue line surveys, Oswego canal	181	1917	Middle	1,515 18	
Surveys for State Court of Claims, Erie canal	181	1917	Middle	1,587 71	
Surveys for State Court of Claims, Black River canal	181	1917	Middle	301 01	
Surveys for Barge canal extension to Auburn	376	1917	Middle	8,359 21	23,575 94
Blue line surveys	181	1917	Western	$1,005 67	
Surveys for State Court of Claims	181	1917	Western	2,000 00	
Tonawanda creek survey, Batavia	453	1917	Western	1,650 00	
Study of route of improved Erie canal between Tonawanda and Buffalo	743	1917	Western	4,237 11	8,892 78
Total	......	......	....	....	$76,968 92

Summary of Engineering Expenses for the Fiscal Year Ended June 30, 1918

DIVISION	Ordinary repairs to canals	Construction of Barge canal	Construction of Barge canal, terminals	Bridge designers, engineers, etc.	Special work	Special surveys	Total
Eastern and head office	$11,812 00	$325,378 09	$128,037 62	$1,969 58	$181 62	$44,500 20	$511,879 11
Middle	9,964 88	115,948 02	21,364 65	....	3,617 05	23,575 94	174,470 54
Western	10,000 00	171,566 55	23,914 70	....	1,894 82	8,892 78	216,268 85
Totals	$31,776 88	$612,892 66	$173,316 97	$1,969 58	$5,693 49	$76,968 92	$902,618 50

TABLE OF CONTRACTS COMPLETED DURING THE FISCAL YEAR ENDED JUNE 30, 1918

Special Work

CONTRACTOR	Date of contract	Character of work	Division	ACT		Appropriation	Engineer's preliminary estimate	Contract price as modified by alterations	Final payment
				Chap.	Year				
Walter S. Rae	Oct. 25, 1915	Continuing and completing construction of bridge over Black and Moose rivers at Lyons Falls, Lewis county	Middle	699 728 646	1915 1915 1916	*$67,888 44	$59,385 00	$61,719 40	$56,772 28
A. M. Hasell, Inc	Aug. 16, 1917	Repairing timber bulkhead at highway adjacent to U. S. fort, Rockaway Point	Eastern	130	1917	†	38,465 50	40,835 35	39,949 31

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* This figure includes $37,888.44 reappropriated from the unexpended balance from chapter 246, Laws of 1913, and a new appropriation of $30,000.00.

† Work done under an act which, in addition to making provisions for the acquisition of land, appropriated $100,000.00 for highway improvement, for purposes of public defense.

Construction of the Barge Canal

Chapter 147, Laws of 1903; chapter 391, Laws of 1909; and amendatory laws

CONTRACTOR	Date of contract	Character of work	Division	Engineer's preliminary estimate	Contract price as modified by alterations	Final payment
A. A. Parker	Oct. 17, 1916	Contract No. 2-G, Erie canal — Spillway, Taintor gate and operating equipment, Waterford side-cut	Eastern	$9,686 00	$11,769 85	$11,589 50
Mohawk Dredge & Dock Co., Inc.	Nov. 24, 1916	Contract No. 30-A, Erie canal — Completing the canal from Jacksonburg to Herkimer	Eastern	122,013 00	128,837 20	124,460 85
The M. A. Talbott Co.	Oct. 15, 1909	Contract No. 43, Erie canal — Oriskany road to Mud creek	Middle	1,529,885 00	1,388,080 05	1,281,571 54
James Stewart & Co., Inc.	Sept. 2, 1914	Contract No. 46-A, Erie canal — Fox Ridge to Montezuma aqueduct	Middle	333,941 50	196,133 50	180,438 93
Alto Construction Co.	Dec. 23, 1910	Contract No. 51, Water-supply — Feeder from Trenton Falls on West Canada creek to Nine-Mile creek	Middle	424,710 00	414,869 85	360,607 46
P. H. Murray	July 3, 1916	Contract No. 59-A, Erie canal — Sewer from Genesee Valley park, Rochester	Western	124,260 55	110,689 45	109,996 85
Central Dredging Co.	Oct. 22, 1912	Contract No. 70-A, Champlain canal — Hudson river, Waterford to lock No. 1	Eastern	790,488 00	759,158 88	789,591 62
James Stewart & Co., Inc.	July 7, 1916	Contract No. 72-B, Champlain canal — Widening prism at mouth of Hoosic river	Eastern	207,700 00	108,540 00	92,516 58
Dunbar & Sullivan Dredging Co.	Feb. 13, 1914	Contract No. 74, Erie canal — Hudson river and Mohawk river at Waterford	Eastern	256,372 00	240,872 00	215,741 49
Chesley, Earl & Heimbach, Inc.	Oct. 17, 1916	Contract No. 81, Erie canal — Junction lock at Rome	Middle	61,236 40	54,685 90	49,206 80
Lord Construction Co.	Nov. 24, 1916	Contract No. 91-A, Erie canal — New governor equipment for hydro-electric power-plant at Crescent dam	Eastern	6,310 00	5,930 00	5,926 10
Holler & Shepard	May 27, 1916	Contract No. 128, Champlain canal — Highway bridge at Northumberland	Eastern	77,751 50	76,486 70	74,591 29
The Foundation Co.	June 6, 1916	Contract No. 129, Erie canal — Freeman's bridge	Eastern	80,976 50	89,900 80	82,201 62
Lupfer & Remick	Nov. 3, 1916	Contract No. 132, Erie canal — Lighthouses, range towers, beacons, etc.	Middle	63,937 00	70,267 80	69,669 29
Morrison & Quinn, Inc.	Oct. 16, 1916	Contract No. 133, Erie canal — Junction lock at Mohawk	Eastern	47,534 00	48,638 80	39,203 20
Great Lakes Dredge & Dock Co.	Sept. 18, 1916	Contract No. 135, Erie canal — Widening the prism at Canajoharie	Eastern	78,052 00	57,038 00	48,637 34
J. A. Laporte	Oct. 13, 1916	Contract No. 137, Erie canal — Sheet-piling at dam No. 10, Canajoharie	Eastern	25,333 00	22,650 00	17,041 90
Empire Engineering Co., Inc.	Nov. 3, 1916	Contract No. 139, Oswego canal — Lock No. 8 to deep water in Lake Ontario	Middle	25,280 00	25,912 00	17,836 64
Brown & Lowe Co.	Dec. 1, 1916	Contract No. 150, Erie canal — Apron below head-gates at Vischer Ferry dam	Eastern	20,300 00	21,780 00	22,273 00

TABLE OF CONTRACTS COMPLETED DURING THE FISCAL YEAR ENDED JUNE 30, 1918 — (*Continued*)

Construction of the Barge Canal — (Continued)

CONTRACTOR	Date of contract	Character of work	Division	Engineer's preliminary estimate	Contract price as modified by alterations	Final payment
R. B. Wing & Son	Feb. 28, 1917	Contract No. 153, Erie and Oswego canals — Buoy, stake and bridge lanterns on the Mohawk, Oneida, Seneca and Oswego rivers	Eastern and Middle	$4,200 00	$4,389 00	$4,389 00
Lupfer & Remick	April 7, 1917	Contract No. 154, Erie canal — Additional Taintor gate, lock No. 27, Lyons	Western	7,802 70	8,582 50	8,409 30
Lupfer & Remick	Jan. 31, 1917	Contract No. 155, Erie canal — Hoists for bulkhead gates, Vischer Ferry dam	Eastern	9,998 00	11,586 00	11,327 86
Thomas Bowen	April 20, 1917	Contract No. 157, Erie canal — Dam across old Erie canal at Rome	Middle	4,924 00	6,247 50	5,890 22
Charles A. Ingersoll	Mar. 27, 1917	Contract No. 162, Erie canal — Drain at Main street, Brockport	Western	6,173 90	7,208 30	6,455 72
Holler & Shepard	June 28, 1917	Contract No. 169, Champlain canal — Temporary cribs below locks Nos. 3 and 6	Eastern	3,508 00	3,066 00	2,882 53
R. B. Wing & Son	Feb. 9, 1918	Contract No. 173, Erie canal — Buoy, stake and bridge lanterns on the Seneca, Clyde, Genesee and Tonawanda rivers	Middle and Western	9,500 00	8,960 00	8,960 00
W. F. Martens	Mar. 12, 1918	Contract No. 178, Erie canal — Additional protection in by-passes at locks Nos. 32 and 33	Western	41,706 00	49,844 00	47,271 62
The Sherman-Stalter Co.	July 24, 1916	Contract A-1, Cayuga and Seneca canal — Fish-ladder and repairs to dam No. 1	Middle	29,019 30	26,842 50	24,749 82
Stanley Construction Co.	July 20, 1914	Contract F, Cayuga and Seneca canal — Free, Demont's and Lake road bridges	Middle	126,263 00	142,578 70	127,399 75
Scott Brothers	Sept. 23, 1915	Contract L, Cayuga and Seneca canal — Bridges at Gorham street and Kingdom road	Middle	71,469 25	59,928 40	53,549 16
The Foundation Co.	June 8, 1917	Contract P, Cayuga and Seneca canal — Concrete cut-off wall under lock No. 3	Middle	76,412 50	82,850 00	98,372 32

Special Work Connected with Barge Canal Construction

CONTRACTOR	Date of contract	Character of work	Division	Engineer's preliminary estimate	Contract price as modified by alterations	Final payment
American Pipe & Construction Co.	April 2, 1917	Erie canal — Completing work on contract No. 20-D that had been added by alterations	Eastern	....	....	$64,815 90
Harry A. Schaupp	Jan. 17, 1916	Erie canal — Connecting highways, Muck road to James street and Whitesboro street to Mill street, Rome	Middle	$28,634 55	$32,111 15	31,730 24
Lackawanna Bridge Co.	Jan. 24, 1914	Erie canal — Furnishing and placing machinery in guard-lock on contract No. 21	Western	....	....	4,873 91

TABLE OF CONTRACTS COMPLETED DURING THE FISCAL YEAR ENDED JUNE 30, 1918 — (*Concluded*)

Construction of Barge Canal Terminals

Chapter 746, Laws of 1911, and amendatory laws

CONTRACTOR	Date of contract	Character of work	Division	Engineer's preliminary estimate	Contract price as modified by alterations	Final payment
Kendar Engineering & Construction Co., Inc.	Dec. 29, 1914	Terminal contract No. 13 — Guard-lock, highway bridge and cut-off dam at Schuylerville	Eastern	$61,664 60	$42,742 80	*$38,190 00
Mohawk Dredge & Dock Co., Inc.	Aug. 13, 1917	Terminal contract No. 15-D — Drainage system at the Utica terminal	Middle	8,200 00	8,989 00	8,863 39
E. Brown Baker	June 4, 1917	Terminal contract No. 16-P — Paving terminal at Rome	Middle	3,300 00	3,909 50	4,169 50
H. S. Kerbaugh, Inc.	July 10, 1914	Terminal contract No. 33 — Terminal pier, channels, etc., at the east end of West First street, Oswego	Middle	415,420 00	351,175 50	333,388 36
Fred H. Rhodey	Mar. 29, 1917	Terminal contract No. 39 — Terminal at Albion	Western	2,700 00	2,952 50	2,718 00
Scott Brothers	Sept. 20, 1915	Terminal contract No. 40 — Dockwall and harbor at St. Johnsville	Eastern	27,963 00	27,762 37	25,542 91
Hammond-Tracey Construction Co., Inc.	Mar. 27, 1917	Terminal contract No. 54 — Terminal at Middleport	Western	1,250 00	1,234 00	1,052 25
Kennedy & Scullen	Mar. 12, 1917	Terminal contract No. 204 — Temporary terminal warehouses at Schenectady, Amsterdam, Fonda, Ilion and Frankfort	Eastern	4,765 00	†19,000 00	19,023 35
William R. Kimmey	Mar. 14, 1917	Terminal contract No. 205 — Temporary terminal warehouses at Utica and Rome	Middle	2,320 00	†13,906 75	13,520 55
Kennedy & Scullen Construction Co.	May 7, 1917	Terminal contract No. 208 — Temporary terminal warehouses at Fort Plain and Little Falls	Eastern	9,140 00	9,278 76	9,289 18
G. J. and P. L. Metzger	June 4, 1917	Terminal contract No. 209 — Frame warehouses at Tonawanda and North Tonawanda	Western	7,892 00	7,535 00	7,459 10
Savage Construction Co.	June 1, 1917	Terminal contract No. 210 — Frame warehouses at upper and lower terminal sites at Lockport	Western	9,955 00	9,903 00	9,765 00
W. F. Martens & Co., Inc.	June 14, 1917	Terminal contract No. 211 — Frame warehouses at Newark, Albion and Medina	Western	8,800 00	8,002 00	7,896 80

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* Terminal contract No. 13 was suspended by the Canal Board February 23, 1916. The work on this contract has all been done by the Superintendent of Public Works. The amount, $38,190.00, is based on the last estimate of work done, at contract prices.

† The warehouses under contracts Nos. 204 and 205 were all increased in size by alterations to the contracts. For this reason the contract price of each was increased considerably.

TABLE OF CONTRACTS PENDING JUNE 30, 1918

Special Work

CONTRACTOR	Date of contract	Character of work	Division	ACT		Appropriation	Engineer's preliminary estimate	Contract price as modified by alterations	Value of work done to June 30, 1918
				Chap.	Year				
Rosoff Engineering Co.	June 12, 1918	Constructing a concrete pavement on State reservation, Rockaway Point	Eastern	130	1917	*	$35,995 00	$46,126 25	$0 00
A. M. Hazell, Inc.	Jan. 3, 1918	Repairs to landing pier, Quarantine station, Hoffman island, New York harbor	Eastern	......	......	†	....	3,387 00	3,320 00
Anderson & Wheeler	June 26, 1918	Repairs to north pier, Quarantine station, Hoffman island, New York harbor	Eastern	......	......	†	....	....	0 00
Walter S. Rae	Oct. 25, 1917	Constructing a steel bridge over the Black River canal at E. Whitesboro St., Rome	Middle	753	1917	$15,000 00	12,085 00	11,683 00	0 00
Robert Provo	Nov. 30, 1917	Dredging and improvement of Cowaselon creek, between Canastota and Lakeport	Middle	781	1917	12,000 00	10,420 00	10,380 00	0 00
Larkin & Sangster	Sept. 12, 1916	For constructing portions of a bridge over the Oswego river at Minetto. (Part of Barge canal contract No. 99)	Middle	716 181	1915 1917	50,000 00	44,088 15	42,988 15	30,040 00
W. F. Martens	May 6, 1918	Dredging harbor and repairing pier and breakwater at Canandaigua	Middle	756	1917	16,500 00	....	15,097 00	0 00
Russell R. Ames	Jan. 30, 1918	Constructing a concrete culvert over Eighteen-Mile creek, Lockport	Western	626	1917	12,500 00	10,805 00	11,236 00	340 00
J. W. Hennessy, Inc.	April 18, 1918	Improvement of Ellicott creek, Erie county	Western	760 181	1917 1917	88,711 38	83,803 25	86,885 30	0 00
Lupfer & Remick	Mar. 15, 1918	Construction of a steel through-truss bridge over the old Erie canal at Hertel avenue, Buffalo	Western	761	1917	30,000 00	27,937 50	27,967 20	5,750 00
Geo. L. Maltby	Mar. 23, 1916	Improvement of Chadakoin river, Chautauqua county	Western	758 728	1913 1915	100,000 00	89,252 25	92,074 25	8,570 00

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* Work done under an act which, in addition to making provision for the acquisition of land, appropriated $100,000.00 for highway improvement, for purposes of public defense.

† These contracts have been prepared and the work is being supervised by this Department for the Health Officer of the port of New York. The funds are available from appropriations for the use of this officer.

TABLE OF CONTRACTS PENDING JUNE 30, 1918 — (*Continued*)

Construction of the Barge Canal

Chapter 147, Laws of 1903; chapter 391, Laws of 1909; and amendatory laws

CONTRACTOR	Date of contract	Character of work	Division	Engineer's preliminary estimate	Contract price as modified by alterations	Value of work done to June 30, 1918
Holler & Shepard	Aug. 31, 1914	Contract No. 1-A, Champlain canal — Hudson river, Northumberland to Fort Miller and Crocker's Reef to Fort Edward	Eastern	$90,811 00	$141,540 20	$193,530 00
Empire Engineering Co., Inc.	Nov. 3, 1916	Contract No. 19-A, Erie canal — Redredging contract No. 19 and incidental work	Western	152,200 00	169,750 10	142,820 00
Walsh Construction Co.	Feb. 16, 1916	Contract No. 21-A, Erie canal — Completing canal, 400 feet west of Genesee river to N. Y. C. R. R. crossing	Western	415,700 00	428,475 54	393,990 00
Empire Engineering Co., Inc.	May 20, 1916	Contract No. 23-A, Erie canal — Completing canal, King's Bend to Genesee river	Western	651,703 10	745,672 42	461,810 00
Eastover Construction Co., Inc.	Mar. 27, 1916	Contract No. 29-A, Erie canal — Completing canal, Sterling creek to Herkimer-Oneida county line	Eastern	162,005 00	318,659 70	298,520 00
Grant Smith & Co., & Locher	Feb. 24, 1913	Contract No. 42-A, Erie canal — Herkimer-Oneida county line to Oriskany road	Middle	1,033,037 85	1,239,045 03	1,194,050 00
Scott Brothers	Oct. 10, 1916	Contract No. 44-A, Erie canal — Prism near junction lock at New London	Middle	57,050 00	52,486 00	45,970 00
Scott Brothers	Feb. 25, 1916	Contract No. 46-B, Erie canal — Lock, dam, etc., at May's Point	Middle	314,660 72	293,676 97	258,760 00
MacArthur Bros. Co.	Nov. 3, 1916	Contract No. 59, Erie canal — Constructing canal between contracts Nos. 21-A and 23-A at Genesee river, and Rochester harbor	Western	1,675,252 86	1,603,285 11	413,460 00
Great Lakes Dredge & Dock Co.	Jan. 15, 1916	Contract No. 73-A Champlain canal — Completing the canal from Northumberland to Stillwater	Eastern	432,045 00	506,169 67	447,430 00
Mohawk Dredge & Dock Co.	Oct. 22, 1917	Contract No. 83, Erie canal — Completing the canal at Tonawanda and other work near Sulphur Springs	Western	149,604 50	216,615 00	55,200 00
Lupfer & Remick	Mar. 9, 1917	Contract No. 84, Erie canal — Viaduct over Clyde river at Clyde	Western	83,984 50	83,876 66	37,300 00
The Holington Co.	Jan. 5, 1911	Contract No. 91, Erie canal — Hydro-electric power-plant at Crescent dam	Eastern	44,600 00	44,985 50	43,710 00
Tifft Construction Co., Inc.	Nov. 24, 1916	Contract No. 98, Erie canal — Adams street lift-bridge, Lockport	Western	77,496 60	82,426 25	73,690 00
Larkin & Sangster	Sept. 12, 1916	Contract No. 99, Oswego canal — Bridge over Oswego river at Minetto	Middle	†72,992 60	†73,082 60	†56,960 00
Walter S. Rae	April 15, 1918	Contract No. 117, Oswego canal — Bridge over lock No. 2, Fulton	Middle	34,713 30	36,513 80	0 00
Chesley, Earl & Heimbach, Inc.	Mar. 8, 1917	Contract No. 122-A, Erie canal — Completing highway bridge near Little Falls	Eastern	52,717 00	67,377 00	37,130 00

M. Fitzgerald	Mar. 5, 1917	Contract No. 131-A. Champlain canal — Completing portions of a highway bridge at Schuylerville	Eastern	30,753 00	39,634 50	36,880 00
Combined Construction Co	April 19, 1917	Contract No. 138, Erie canal — Movable dam, etc., at Rochester	Western	302,700 30	321,115 12	20,200 00
W. F. Maas & Son	Mar. 8, 1917	Contract No. 141, Erie canal — Power-station at lock No. 29, Palmyra	Western	41,166 50	41,180 75	11,760 00
W. F. Martens & Co., Inc	June 14, 1917	Contract No. 144, Erie canal — Two concrete bridges over Red creek, Genesee Valley park, Rochester	Western	41,480 70	41,258 70	5,740 00
Peckham Construction Co., Inc	April 18, 1918	Contract No. 146, Erie canal — Movable dam at Herkimer	Eastern	81,726 20	93,769 40	180 00
Lathrop, Shea & Henwood Co	Sept. 10, 1917	Contract No. 147, Erie canal — Lift-bridge between Tonawanda and North Tonawanda	Western	227,032 80	233,986 30	30,530 00
Lathrop, Shea & Henwood Co	Sept. 5, 1917	Contract No. 148, Erie canal — Highway bridge at Leach street, Lyons	Western	65,810 60	66,986 20	7,270 00
Chesley, Earl & Heimbach, Inc	Aug. 28, 1917	Contract No. 156, Erie canal — Highway bridge near Sylvan Beach	Middle	7,788 00	10,113 00	2,510 00
I. M. Ludington's Sons, Inc	Mar. 27, 1917	Contract No. 159, Erie canal — Extending Ganargua creek spillway and raising canal banks nearby	Western	30,464 00	43,258 50	33,660 00
Lord Construction Co	Aug. 3, 1917	Contract No. 161, Erie canal — Electric motors and machinery for guard-locks at Rochester	Western	5,972 00	15,867 35	9,040 00
Lathrop, Shea & Henwood Co	Oct. 30, 1917	Contract No. 164, Erie canal — Completing canal between Lyons and Newark and retaining dam at Macedon	Western	124,313 00	159,848 25	81,980 00
Mohawk Dredge & Dock Co., Inc	Nov. 23, 1917	Contract No. 165, Erie canal — Removing Montezuma aqueduct	Middle	84,530 00	160,943 00	116,680 00
Walter S. Rae	Oct. 13, 1917	Contract No. 167, Oswego canal — Bascule bridge at Culvert street, Phoenix	Middle	26,653 60	29,689 30	1,000 00
Cleveland & Sons Co	Nov. 10, 1917	Contract No. 170, Erie canal — Junction lock at South Greece	Western	54,800 50	64,942 50	44,060 00
Lupfer & Remick	Mar. 25, 1918	Contract No. 172, Erie canal — Barrel buoys and lamp-posts on the Seneca, Clyde, Genesee and Tonawanda rivers	Middle and Western	14,853 00	12,921 45	11,220 00
I. M. Ludington's Sons, Inc	Nov. 9, 1917	Contract No. 179, Erie canal — Completing the canal at railroad crossings near Pittsford	Western	76,033 50	84,992 20	62,190 00
Dunbar & Sullivan Dredging Co	Mar. 15, 1918	Contract No. 180, Erie canal — Removing part of aqueduct at Rexford Flats	Eastern	17,840 00	15,958 00	15,810 00
Law Brothers	Dec. 28, 1917	Contract No. 181, Erie canal — Lining and water-proofing prism at Little Falls	Eastern	46,624 00	54,694 00	47,370 00
Mohawk Dredge & Dock Co., Inc.	April 12, 1918	Contract No. 184, Erie canal — Excavating under N. Y. C. R. R. bridge at Brewerton	Middle	7,200 00	9,480 00	9,400 00
Robert Wetherill, Receiver, American Pipe & Construction Co	June 24, 1918	Contract No. 185, Erie canal — Improving river channel below dams at Scotia and Rotterdam	Eastern	230,550 00	154,395 00	0 00
Lupfer & Remick	Nov. 5, 1914	Contract M, Cayuga and Seneca canal — Electrical and operating equipment for locks Nos. 1, 2, 3 and 4	Middle	176,087 00	191,436 00	186,100 00
The Sherman-Stalter Co	April 30, 1918	Contract R, Cayuga and Seneca canal — Completing work at several locations	Middle	185,259 00	180,122 80	15,170 00

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† These figures do not include the portion of this contract under chapter 746, Laws of 1915. See "Special Work."

TABLE OF CONTRACTS PENDING JUNE 30, 1918 — (*Continued*)

Special Work Connected with Barge Canal Construction

CONTRACTOR	Date of contract	Character of work	Division	Engineer's preliminary estimate	Contract price as modified by alterations	Value of work done to June 30, 1918
The Sherman-Stalter Co.	Mar. 27, 1917	Erie canal — Completing contract No. 47-A, east line of Wayne county to Lyons	Western	....	....	$911,107 16
Superintendent of Public Works	....	Erie canal — Completing contract No. 63-A, west line of Wayne county to King's Bend	Western	....	....	335,025 44

Construction of Barge Canal Terminals

Chapter 746, Laws of 1911, and amendatory laws

CONTRACTOR	Date of contract	Character of work	Division	Engineer's preliminary estimate	Contract price as modified by alterations	Value of work done to June 30, 1918
James P. Kelly	April 15, 1918	Terminal contract No. 8-P — Paving terminal at Schenectady	Eastern	$8,400 00	$8,400 00	$1,000 00
Patrick W. Mulderry	April 12, 1918	Terminal contract No. 10-P — Paving terminal at Fonda	Eastern	8,602 00	8,700 00	0 00
Anchor Post Iron Works	April 16, 1918	Terminal contract No. 12-F — Fence at the Amsterdam terminal	Eastern	1,289 00	1,379 50	0 00
Lupfer & Remick	Oct. 31, 1917	Terminal contract No. 15-M — Electrical equipment for the Utica terminal	Middle	30,681 20	36,967 50	7,140 00
McHarg-Barton Co	Nov. 24, 1916	Terminal contract No. 19 — Dredging and constructing bulkhead wall and pier, and repairing two piers and a bulkhead at Greenpoint	Eastern	193,500 00	211,513 00	131,450 00
Walsh Construction Co., Inc	Nov. 4, 1915	Terminal contract No. 20 — Terminal basin with connecting channel to Onondaga lake at Syracuse	Middle	665,875 00	566,753 26	513,690 00
H. S. Kerbaugh, Inc	Jan. 12, 1914	Terminal contract No. 21 — Harbor, piers, bulkheads, etc., in Erie basin, Buffalo	Western	1,513,925 00	797,772 30	642,060 00
Henry P. Burgard Co	May 6, 1918	Terminal contract No. 21-P — Paving part of terminal at Erie basin, Buffalo	Western	14,180 00	14,350 00	370 00
John E. Byron & Co	Oct. 30, 1916	Terminal contract No. 26 — Dredging and constructing pier at Rouses Point	Eastern	51,200 00	55,678 50	18,730 00
Patrick W. Mulderry	April 12, 1918	Terminal contract No. 27-P — Paving terminal at Frankfort	Eastern	4,100 00	4,446 00	0 00
Barrally & Ingersoll	Feb. 15, 1915	Terminal contract No. 28 — Harbor, dockwall and breakwaters on Oneida lake at Cleveland	Middle	34,575 00	37,222 00	32,110 00
Barrally & Ingersoll	Nov. 27, 1914	Terminal contract No. 29 — Harbor, dockwall and breakwaters on Oneida lake at Constantia	Middle	43,573 50	39,793 50	3,400 00
Henry P. Burgard	Mar. 24, 1916	Terminal contract No. 30 — Dockwall and approach on east side of Oswego river at Oswego	Middle	103,700 00	106,166 70	96,180 00
Lupfer & Remick	Sept. 30, 1916	Terminal contract No. 31 — Terminal at Lyons	Western	57,925 00	51,653 80	32,050 00
Guy B. Dickison	May 27, 1918	Terminal contract No. 33-P — Paving part of terminal pier at Oswego	Middle	11,010 00	11,730 00	0 00
Holler & Shepard	Aug. 26, 1915	Terminal contract No. 37 — Dockwall and harbor at Canajoharie	Eastern	33,832 00	32,272 00	26,500 00
I. J. Stander & Co., Inc	Oct. 27, 1917	Terminal contract No. 38 — Constructing pier at West 53d street, North river, New York city	Eastern	259,000 00	265,503 16	51,490 00

TABLE OF CONTRACTS PENDING JUNE 30, 1918 — *(Concluded)*

Construction of Barge Canal Terminals — (Continued)

CONTRACTOR	Date of contract	Character of work	Division	Engineer's preliminary estimate	Contract price as modified by alterations	Value of work done to June 30, 1918
Geo. W. Rogers Co., Inc.	June 8, 1917	Terminal contract No. 44 — Terminal at Mott Haven	Eastern	$170,300 00	$191,195 50	$120,740 00
M. H. Ripton	Oct. 19, 1916	Terminal contract No. 48 — Terminal on east side of Genesee river at Rochester	Western	101,000 00	93,828 00	79,900 00
Kaufman & Garcey	July 27, 1916	Terminal contract No. 52 — Terminal at Pier 6, East river, New York city	Eastern	89,974 00	102,553 75	97,430 00
Walsh Construction Co.	Oct. 27, 1916	Terminal contract No. 53 — Terminal at Ohio basin, Buffalo	Western	571,800 00	597,984 00	68,370 00
Riverside Contracting Co.	Sept. 4, 1917	Terminal contract No. 55 — Terminal at Gowanus bay, Brooklyn	Eastern	513,000 00	508,400 75	157,330 00
I. J. Stander & Co., Inc.	June 28, 1918	Terminal contract No. 56 — Repairing Pier 5, East river, New York city	Eastern	20,400 00	27,159 60	0 00
W. F. Martens	May 6, 1918	Terminal contract No. 59 — Railroad approach to terminal pier at Oswego	Middle	5,100 00	6,516 00	1,620 00
W. F. Martens	May 6, 1918	Terminal contract No. 60 — Railroad and crane tracks on terminal pier at Oswego	Middle	8,365 00	9,690 00	3,410 00
Walsh Construction Co.	May 15, 1918	Terminal contract No. 61 — Railroad approach to pier 1, Erie basin, Buffalo	Western	9,720 00	11,650 00	1,470 00
Walsh Construction Co.	May 15, 1918	Terminal contract No. 62 — Railroad and crane tracks on pier 1, Erie basin, Buffalo	Western	8,470 00	11,400 00	0 00
H. W. Roberts & Co.	April 19, 1918	Terminal contract No. 63 — Railroad tracks and brick pavement on the terminal at Utica	Middle	9,590 00	10,164 00	0 00
Robert Wetherill, Receiver, American Pipe & Construction Co.	April 24, 1918	Terminal contract No. 64 — Railroad and crane tracks on terminal at Schenectady	Eastern	9,000 00	10,021 30	2,150 00
Empire Engineering Co., Inc.	June 29, 1918	Terminal contract No. 66 — Riprap at Erie basin, Buffalo	Western	11,850 00	12,820 00	0 00
Mohawk Dredge & Dock Co., Inc.	Dec. 18, 1916	Terminal contract No. 101 — Stiff-leg derricks on terminal sites at Albany, Whitehall, Little Falls, Rome, Lockport and Tonawanda	Eastern, Middle and Western	21,890 90	31,790 90	34,960 00
Brown Portable Conveying Machinery Co.	Oct. 3, 1917	Terminal contract No. 103-A — Two package-freight conveyors	Eastern	7,800 00	8,200 00	0 00

Lord Electric Co.	June 28, 1918	Terminal contract No. 105 — Installing electric wiring; lighting, power and battery-charging equipment, and auto-truck scales for Pier 6, East river, New York city	Eastern	17,742 40	16,000 50	0 00
The John F. Byers Machine Co.	Feb. 14, 1918	Terminal contract No. 106 — Fourteen two-ton tractor cranes for various terminals	Eastern, Middle and Western	73,500 00	77,210 00	40,130 00
J. A. Laporte	Jan. 2, 1917	Terminal contract No. 201 — Terminal warehouses at Albany and Whitehall	Eastern	59,300 00	65,174 85	23,770 00
I. J. Stander & Co., Inc.	Jan. 11, 1918	Terminal contract No. 207 — Terminal freight-shed and head-house on Pier 6, East river, New York city	Eastern	133,500 00	128,250 01	0 00
Miller & Brady, Inc.	Mar. 22, 1918	Terminal contract No. 207-H — Heating system in freight-shed on Pier 6, East river, New York city	Eastern	3,250 00	2,352 00	0 00
Jarcho Bros., Inc.	April 16, 1918	Terminal contract No. 207-P — Plumbing and water-supply system in freight-shed on Pier 6, East river, New York city	Eastern	6,000 00	6,650 00	0 00
Savage Construction Co.	Feb. 14, 1918	Terminal contract No. 213 — Freight-house and four derricks at Syracuse	Middle	28,200 00	27,032 00	14,530 00
Kennedy & Scullen Construction Co.	April 26, 1918	Terminal contract No. 214 — Freight-house and pavement at Amsterdam	Eastern	16,478 00	16,323 00	6,180 00

SUMMARY OF CONSTRUCTION WORK — BARGE CANAL AND TERMINALS

Value of work done under Barge canal and terminal contracts, summarized by years and canals

YEAR*	BARGE CANAL						
	ERIE CANAL			Champlain canal	Oswego canal	Cayuga and Seneca canal	Terminals
	Eastern Division	Middle Division	Western Division				
1905	$36,640		$59,190	$71,620			
1906	140,860	$52,570	197,840	216,950	$2,220		
1907	553,980	228,820	192,580	658,580	69,010		
1908	1,557,774	580,367	416,290	1,426,159	173,030		
1909	2,325,760	1,530,410	2,012,119	1,281,610	324,060		
1910	1,994,920	1,394,542	3,279,387	1,361,698	529,890		
1911	2,756,161	2,362,223	5,285,424	2,342,781	1,075,556	$432,050	
1912	2,128,787	1,802,231	6,595,375	1,070,702	1,117,259	517,450	
1913	2,049,109	1,682,835	5,380,484	1,227,017	1,427,058	865,810	$559,410
1914	2,593,664	2,079,504	†2,334,353	2,039,534	1,059,637	1,231,539	1,119,600
1915	2,996,147	1,146,418	476,377	1,240,491	552,925	1,365,450	1,009,173
1916	1,312,713	250,385	412,226	406,928	177,856	412,492	452,935
1917	1,277,160	‡580,240	1,179,508	573,694	56,340	167,091	970,633
1918	412,967	385,468	2,673,153	254,523	60,519	142,931	1,038,868
Totals	$22,181,642	$14,076,013	$30,494,306	$14,172,287	$6,625,360	$5,134,813	$5,150,619

Extra Work Orders Paid

1906	$1,316						
1907	378	$1,257					
1908	13,020	50	$300	$59,738	$1,198		
1909	37,141	329	10,464	23,854	761		
1910	12,896	12,389	10,692	16			
1911	22,102	3,353	175,505	1,001	2,135		
1912	34,957	2,899	94,935	14,524	1,703		

1913	76,860	11,101	203,577	34,810	8,415	$2,065	....
1914	12,969	17,878	239,744	30,718	15,719	9,534	$2,033
1915	19,731	11,434	20,954	11,094	4,130	2,926	10,437
1916	8,728	10,355	436	290	276	66,709	14,134
1917	12,699	3,714	8,893	1,844	10,217	8,845	9,995
1918	123,585	13,163	142,096	11,376	739	9,790	24,725
Totals	$376,382	$87,922	$907,596	$189,265	$45,293	$99,875	$61,324

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* The years 1905 to 1915, inclusive, are twelve-month periods, ended September 30; 1916 is a nine-month period, ended June 30; 1917 and 1918 are twelve-month periods, ended June 30.

† In last year's report the special agreement on contract No. 21 was omitted. Work to the value of $3,360 was done during 1914. The final account, amounting to $4,873.91, was approved by the Canal Board May 1, 1918.

‡ This figure is less than was shown in last year's report because the final account on contract No. 43, which was not available last year, was less than the last monthly estimate then available to the extent of $6,208.

NOTE.— This table includes work done under the supervision of this Department, excepting highways which were relocated or rebuilt. It includes all the Barge canal work shown in the four tables published in the *Barge Canal Bulletin* for July, 1918, except work to the value of $30,040 done under contract No. 99, but payable from a special appropriation, and a sum of $7,328 due to the difference between the last monthly estimate and the final account on contract No. 43.

Also the following items are included: Contract No. 20-D, work done by the Superintendent of Public Works, $3,400; contract No. 20-D, special agreement for completing work which had been added by alterations, $64,816; contract No. 21-A, special agreement for erecting steel and machinery on the guard-lock, $4,874; contract No. 22, special agreement for supporting the Weedsport bridge, $12,447; contract No. 25, special agreement for completing prism and placing wash wall, $6,029; contract No. 47-A, work done by the Superintendent of Public Works, $911,107; culvert No. 30 at crossing of Irondequoit creek, $372,549; shelter at Delta dam, $2,234; contract No. 63-A, work done by the Superintendent of Public Works, $335,025; and two sums due to the difference between the last monthly estimate and the final account — $189 on contract No. 154 and $732 on contract No. 178.

This table also includes all the terminal work shown in the two tables published in the *Bulletin* before mentioned, and also the sum of $148 due to the difference between the last monthly estimate and the final account on terminal contract No. 33. The remaining difference of one dollar is due to the odd cents on terminal contract No. 9.

REPORT

OF THE

DIVISION ENGINEER

OF THE

EASTERN DIVISION

For the Fiscal Year Ended June 30, 1918

EASTERN DIVISION

STATE OF NEW YORK

DEPARTMENT OF STATE ENGINEER AND SURVEYOR

EASTERN DIVISION

ALBANY, N. Y., *July* 1, 1918.

HON. FRANK M. WILLIAMS, *State Engineer and Surveyor,*
Albany, N. Y.:

Sir.— I have the honor of submitting herewith a report covering the work of the Eastern Division for the fiscal year ended June 30, 1918.

Mr. George D. Williams, Division Engineer, entered active military service on May 1, 1918; and it has been may privilege to carry on the work of the Division since that date.

The Barge canal construction has been progressed to a point near completion, and the portions within this Division have been open for barge navigation throughout the past year. Market conditions of labor and materials are such as to discourage the immediate construction of boats and there has not been the increase in boat tonnage which the condition of the canal would warrant. Some corporations with large bulk shipments have placed under commission boats constructed and equipped for their own class of freight. These, together with the operation of boats constructed for the old canals, have been sufficient to give the canal structures a thorough try-out.

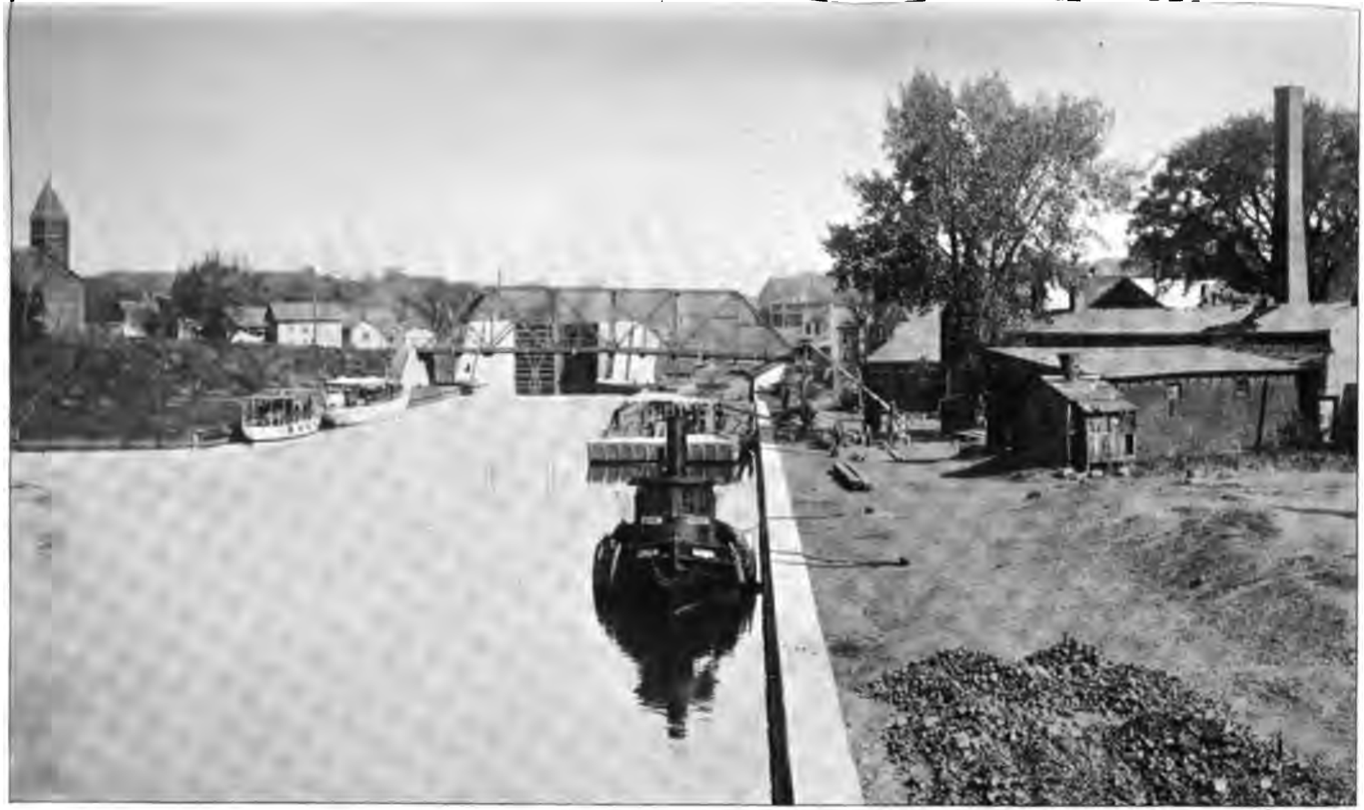
In a system so extensive and with such a variety of structures, it is not surprising that some defects have developed. However, such defects as have been discovered are of a minor nature and have not interfered with navigation on the canals. It has been found necessary to reinforce the foundation of dam No. 5 and lock No. 9, at Rotterdam on the Erie canal. This work is being carried on without interrupting canal operation. Cross currents, where dams are located in close proximity to locks, are causing some difficulty in the control of boats, especially fleets of barges under tow. It is proposed to construct guide cribs at the approaches of three locks on the Champlain canal, and a contract for that work has been prepared. Should this prove effective, the method should be extended to other locks.

During the winter season ice forms upon rock fragments, sunken logs, boulders and other bodies lying on the river bank or on the bottom and when the ice breaks up a portion of these are carried out and deposited within the canal channel. The Superintendent of Public Works has undertaken their removal, but the locating of them has, in general, been done by forces of this Department. This work requires nearly the full time of a field corps in sweeping channels and sounding to determine the nature and extent of obstructions, and in buoying their location and further sweeping, following their removal, to determine if the channel is entirely clear.

The deposit of material in the channel will be an annual occurrence, and in order that the Department may be in a position to investigate channel conditions, I would recommend that sweep-boats be provided, together with suitable power for towing them. The present sweeping outfits are of rather crude construction and not suitable for rapid work.

Where the canal is located in river sections, it is necessary to maintain offset base lines along the shore, in order that the exact location of the excavated channel may be retraced. This is required for the placing of buoys, sweeping of channel, etc. In order to have access to this line and protect the monuments upon it, I would recommend that, in releasing parcels on which the base line is located, a right of way be retained.

Many of the boats navigating the canal prefer to tie up rather than continue on their course during the night. The less seaworthy boats find it necessary to tie up during high stages of the river, or conditions unfavorable to navigation. For this purpose locks and approach walls are being used. I do not understand that such use is seriously interfering with navigation at present, but as the number of boats increases and more seaworthy ones are placed in commission, it may be necessary to provide mooring



EASTERN TERMINUS OF THE BARGE CANAL, ERIE BRANCH

Also the Barge canal terminal at Waterford, a wall built under canal construction serving as a dockwall.

places at points which will not obstruct the locks or approaches. I believe the subject should be investigated, so that this Department will be in a position to make a definite recommendation, should conditions require action.

CONSTRUCTION OF BARGE CANAL AND TERMINALS

During the fiscal year 27 Barge canal contracts have been active, and a portion of the Division force has been engaged in supervising them. A greater portion of the construction force has been employed on work in connection with the terminals. Dock facilities of various types have been under construction at ten locations, freight warehouses have been constructed at twelve terminals, and contracts have been entered into for various types of freight-handling equipment. The equipment under contract consists, principally, of self-propelled, or auto cranes, and fixed derricks. Contracts are being prepared for the installation of gantry cranes, and rail tracks for this type of crane are now under construction. In general, the freight-houses now built or under contract are of timber construction, and are so built as to be readily enlarged when the traffic demands. Several of them have been so crowded as to make the providing of additional facilities necessary, and contracts are now in force or are being prepared for extending the freight accommodations at Troy, Amsterdam, Little Falls, Herkimer and Canajoharie. Freight-houses at other terminals are being filled to capacity and extensions will be necessary. At Albany and Whitehall warehouses of steel and tile construction are under contract. A contract is now in force for the erection of a steel warehouse on Pier 6 at the mouth of East river, New York city.

Labor and material conditions have handicapped the contractors and construction has not progressed as rapidly as we have desired. I feel, however, that in general the contractors have made all reasonable efforts to progress the work and that such delays as have occurred were largely beyond their control.

Besides construction work in connection with the canals and terminals, this Department has made many investigations of alleged claims for damages; has coöperated with the Superintendent of Public Works in the removal of bars and obstructions; has investigated and reported on applications for reconveyance of lands; has prepared release maps for lands no longer required, and has prepared maps for the appropriation of additional lands where construction made such appropriations necessary.

SPECIAL APPROPRIATIONS

In addition to the canal improvement, this Department has been employed in preparing plans and supervising contracts for work provided under special acts of the Legislature and in making miscellaneous surveys, maps, plans, etc., for other departments. A brief outline of such activities follows:

Blue Line Surveys

(Chapter 199, Laws of 1910, and amendatory laws)

The work of surveying and mapping old canal lands has been continued. Surveys for the Champlain canal are now complete except the Glens Falls feeder and that portion between Waterford and the junction with the Erie at Colonie, which is to be retained for use. Maps from this survey have been completed. Tracings have been made for about 50 per cent of the total length and tracings for the remaining portions are about 90 per cent complete.

On the Erie canal surveys are now complete from the easterly end of the canal to Mindenville, except for short distances in the vicinity of Fort Hunter and Randall. Surveys through the city of Little Falls are complete. The plotting of maps is well up with the survey work. If men are available, I hope to see these surveys completed during the next fiscal year.

Bulkhead and Roadway at Rockaway Point, L. I.

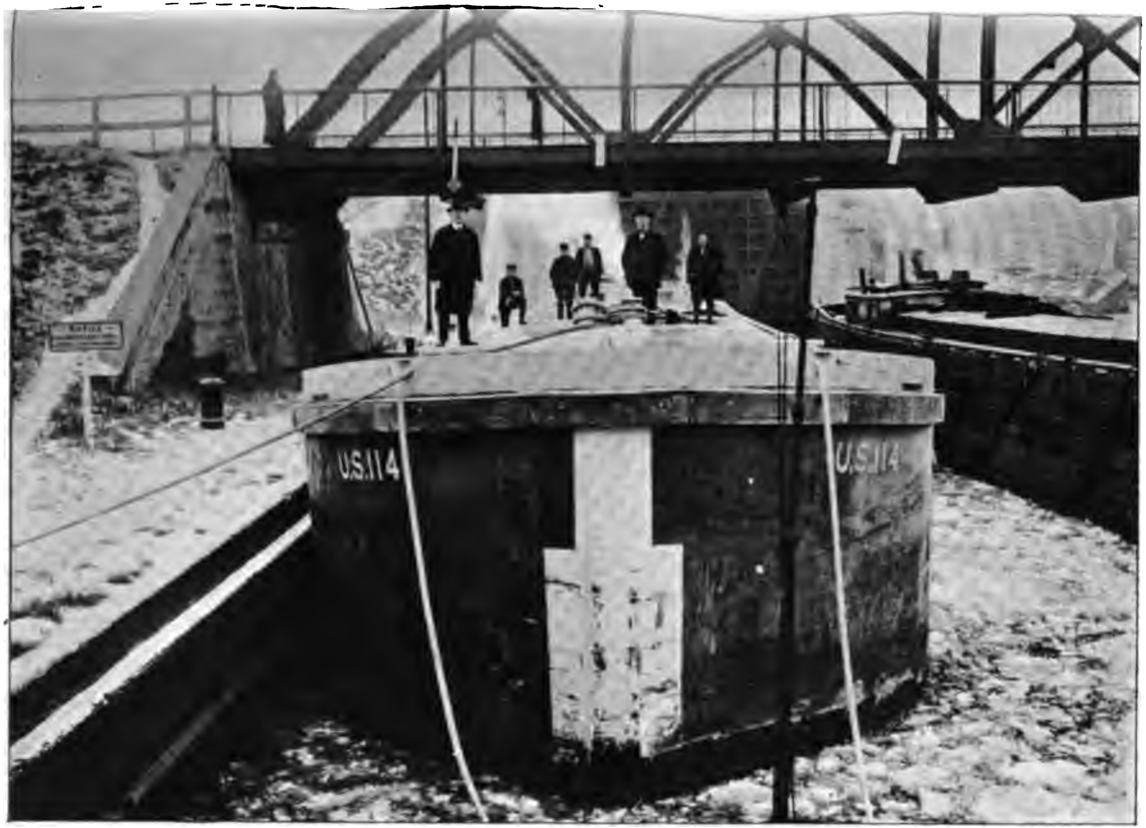
(Chapter 130, Laws of 1917)

Plans and estimates were prepared and the construction supervised for a timber bulkhead and filling of lands adjacent to the site of Fort Tilden at Rockaway Point, Long Island. Under the same chapter plans and specifications have been drawn for the construction of a concrete roadway along this fill.

Repairing Sea-walls, Orient Point, L. I.

(Chapter 428, Laws of 1918)

Surveys have been made and plans, estimate and specifications prepared for repairing sea-walls at Orient Point, Long Island.



A GOVERNMENT CONCRETE BOAT PASSING THROUGH THE BARGE CANAL

This craft, built at Ithaca, made the passage of the canal just as the navigation season was closing. The view was taken at the foot of lock No. 2, just before the boat entered the Hudson river.

Jamaica Bay–Peconic Bay Canal Survey

(Chapter 317, Laws of 1917)

Surveys have been made and preliminary plans with estimate prepared of two routes through Rockaway peninsula, for the proposed Jamaica Bay–Peconic Bay canal.

Removal of High Street Bridge, Cohoes

(Chapter 181, Laws of 1917, and chapter 151, Laws of 1918)

Plans have been prepared and specifications drawn for the removal of the existing bridge over the old canal at High street, in the city of Cohoes, and the substitution of an earth fill. This work includes the regrading of the easterly approaches.

State Boundary Lines

Under chapter 181, Laws of 1917, surveys were made of the boundary line between New York state and the Dominion of Canada, extending from Fort Covington on the west to the New York–Vermont state line on the east. Surveys were also made of the New York and Pensylvania state boundary line. The surveys consisted in examining the monuments and replacing such as were found to have been disturbed.

Schoharie–Delaware County Line Survey

(Chapter 559, Laws of 1918)

On June 10 a survey party was placed in the field to establish the boundary line between Schoharie county and Delaware county. This survey is now under way.

Boundary Line Survey Between Towns of Warrensburg and Luzerne, Warren County, and Between Warren and Saratoga Counties

(Chapter 561, Laws of 1918)

A survey party was organized for this work and began field work on June 18.

These last two surveys are under the supervision of R. S. Greenman, Senior Assistant Engineer. They will not be completed before the end of the summer season. Detailed report will be included with that for the fiscal year ending June 30, 1919.

Miscellaneous Surveys

The surveys, maps, plans, etc., made in coöperation with and at the request of other departments, include those of the armory sites at Troy and Malone; the Schuyler mansion at Albany; the proposed state office building site west of the Capitol at Albany; the Marcy State hospital near Utica; the State hospital at Middletown; the State hospital for the care of crippled and deformed children at West Haverstraw; a portion of Dannemora prison site; Craig Colony property at Sonyea; Wards Island, New York; the Wingdale prison site; and Kings Park hospital, Long Island; and surveys in connection with applications for grants of lands under water and also with foreclosures of U. S. Deposit Fund mortgages.

At Sonyea a topographic survey was made covering nearly the full site of 1,900 acres, the party being employed for about six months.

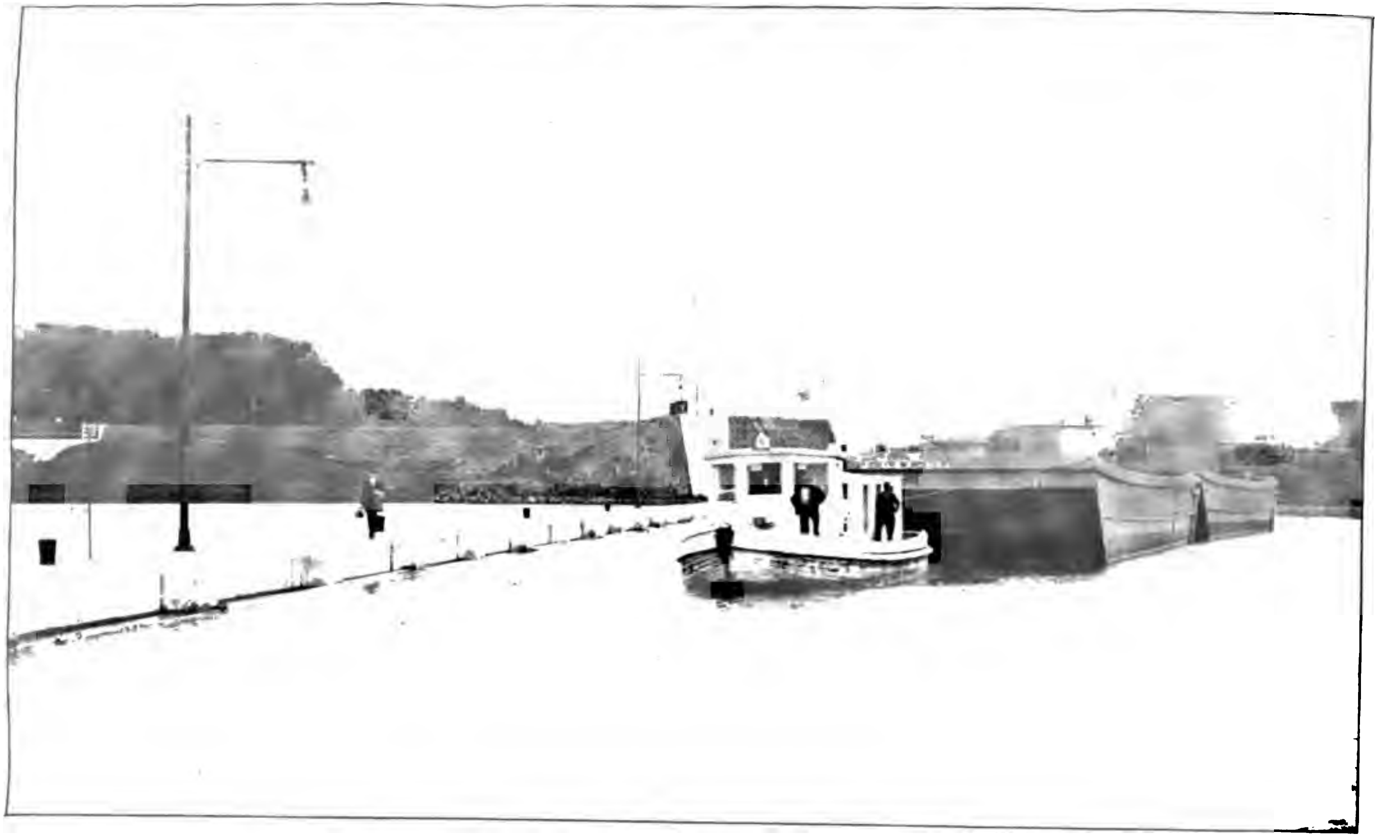
The work at Wingdale included investigations necessary for preparing plans for a dam and reservoir, and the supervision of the contract for grading the building areas.

Investigations have been made and plans are being prepared for a concrete reservoir at Kings Park hospital.

At Hoffman Island quarantine station repairs to the landing pier are being done under the supervision of this Department.

During the year considerable time has been devoted to surveys and maps in connection with applications for grants of lands under water. Investigations have been made and reports rendered for 21 parcels in the vicinity of New York city and 30 parcels up state, principally at Troy.

During the year 60 employees of this Division have entered active military service. The additional work thrown on the employees remaining has been cheerfully undertaken and faithfully performed. May I take this opportunity to express my appreciation of the assistance and advice which you and your deputies have given me and to commend to you the employees of the Division, who have loyally responded to the additional calls upon their time and energy.



Government Boats Passing through the Barge Canal

These boats, which were built at a shipyard in central New York, were taken by canal for service in New York harbor.

Detail reports of the Senior Assistant Engineers in charge of the residencies into which the Division is divided, together with tabulations showing financial statements and disbursements are appended. In the Senior Assistant Engineers' reports will be found descriptions of the construction work done during the year.

Respectfully submitted,
L. C. HULBURD,
Senior Assistant Engineer in Charge.

APPENDED REPORTS — EASTERN DIVISION

ERIE CANAL, RESIDENCY NO. 1

Assistant Engineer R. D. Hayes reports:

This residency extends from Albany to the site of the old lower Mohawk aqueduct.

Contracts Nos. 2-G, 74, and 91-A have been completed and work has progressed on terminal contract No. 36 and those portions of terminal contracts Nos. 101, 106 and 201 in this residency.

The preliminary survey for terminal contract No. 41, at upper Troy, was made during July, 1917.

At the Troy armory site a survey was made, the bearing of property lines being determined with reference to true north. The computations and maps for this survey have been completed. This work was done under chapter 181, Laws of 1917.

During October, 1917, cross-sections were taken at the sites of the Hudson street and High street bridges at Cohoes.

The reports for the several contracts follow.

Contract No. 74

This contract is for excavating a channel in the Hudson river and the Mohawk river and performing work incidental thereto from Sta. 146 + 65 to Sta. 171 + 90. Length, 0.48 mile. It was awarded to Dunbar & Sullivan Dredging Co., being signed on February 13, 1914. The engineer's preliminary estimate was $256,372.00, the contractor's bid, $240,872.00. The value of work done during the year is $15,071. On November 20, 1917, the Canal Board accepted the work and approved the final account, which amounted to $215,741.49.

F. W. Harris, Assistant Engineer, was in charge.

The prism was excavated to full depth and width, except at the junction with contract 70-A, at the end of the last fiscal year. All contract work was finished in September, 1917.

Contract No. 2-G

This contract is for constructing a spillway at the Waterford side-cut, adjacent to Barge canal lock No. 2, and installing Taintor gate with operating equipment. It was awarded to A. A. Parker, being signed on October 17, 1916. The engineer's preliminary estimate was $9,686.00, the contractor's bid, $10,779.12. The contract price as modified by alterations Nos. 1 and 2 is $11,769.85. The value of work done during the year is $330. The work was accepted October 31, 1917, and the final account, amounting to $11,589.50, was approved by the Canal Board November 20, 1917.

F. W. Harris, Assistant Engineer, was in charge.

During July, 1917, the removal of old bridge approaches and the building of a roadway to the lock completed this contract.

Contract No. 91

For building and equipping a hydro-electric power-plant on the Erie canal near the east end of Crescent dam. It was awarded to Welles-Boughton & Co., being signed on January 5, 1911. It was assigned to the Holington Co., this assignment being approved by the Superintendent of Public Works July 31, 1911. Construction work began April 3, 1911. The engineer's preliminary estimate was $44,600.00, the contractor's bid, $42,940.50. The contract price as modified by alteration No. 1 is $44,985.50.

No work has been done during the year. The total work done to date amounts to $43,715.78. For details of work done to date see Report of State Engineer for 1916, page 58.

Contract No. 91-A

This contract is for furnishing and installing new governor equipment for the hydro-electric power-plant at the east end of the Crescent dam. It was awarded to the Lord Construction Co., being signed on November 24, 1916. The engineer's preliminary estimate was $6,310.00, the contractor's bid, $5,930.00. The value of work done during the year is $576. The work was accepted March 6, 1918, and the final account, amounting to $5,926.10, was approved by the Canal Board March 20, 1918.

The amount paid on extra work orders during the year is $300.00, total to date, the same.

F. W. Harris, Assistant Engineer, was in charge.

Final tests were made during the year.

Terminal Contract No. 201

This contract is for constructing terminal warehouses at Albany and Whitehall. The following report relates to the work at Albany. The contract was awarded to J. A. Laporte, being signed on January 2, 1917. Construction work began at Albany on April 3, 1917. The engineer's preliminary estimate for this warehouse was $36,500.00, the contractors bid, $40,106.50. The contract price as modified by alteration No. 1 is $46,104.40. The value of work done during the year is $14,690, to date, $16,820.

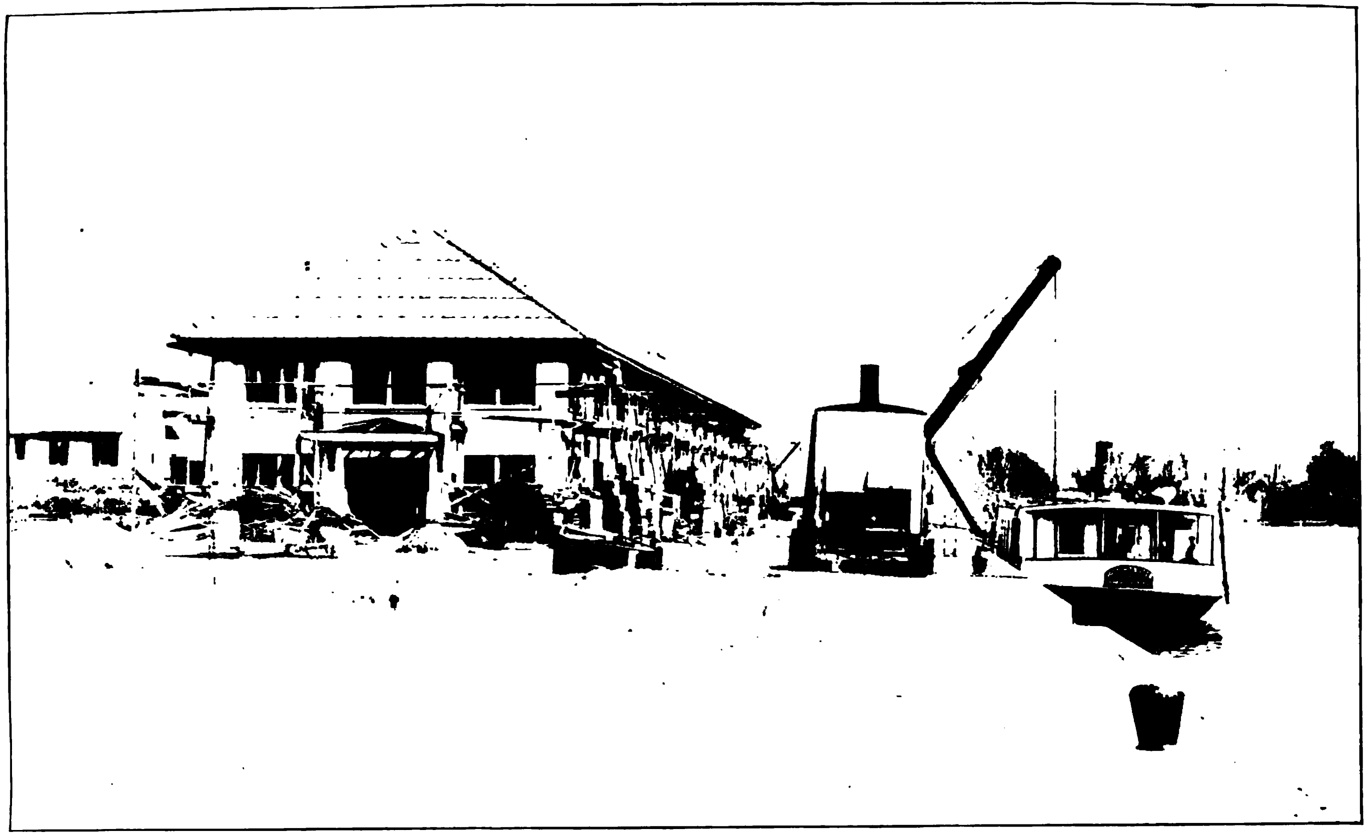
W. L. Caler, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board October 23, 1917, provides for substituting concrete for mastic flooring; placing skylights in the warehouses; paving and underdraining the depressed roadway and railroad track at Albany; placing gravel surfacing on the depressed roadway at Whitehall; and laying a tile drain to conduct the run-off from the easterly slope of the roof of the Whitehall warehouse to the existing sewer. It increases the cost of the Albany warehouse by $5,997.90.

On July 20, 1917, the warehouse had been concreted to elevation 14.2. Practically all of the side walls are up to elevation 18.2. Erection of steel for the building began on January 18, 1918, and on March 31, 1918, this work, including one field coat of graphite paint, was finished. Fire risers under the floor of the warehouse have been placed. The floor in the warehouse part of the building has been placed, all curbing is in, and the platform in front of the office door and the steps are completed. Six-inch pipe has been placed under depressed roadway to connect the building with the city main. All of the six-inch base for paving the depressed roadway and for paving between the warehouse and the dockwall is in place.

Terminal Contract No. 101

This contract is for furnishing and installing steel stiff-leg derricks on terminal sites at Albany, Whitehall, Little Falls,



Barge Canal Terminal at Albany

This terminal has a commodious freight-house, a 12-ton steel derrick, an auto crane, a 1,510-foot dockwall, a paved area and track connections, and is well equipped to handle a large amount of traffic.

Rome, Lockport and Tonawanda. The following report relates to the work at Albany. The contract was awarded to E. Brown Baker, being signed on December 18, 1916. On February 21, 1917, it was assigned to the Mohawk Dredge & Dock Co., Inc., and this assignment was approved by the Superintendent of Public Works March 26, 1917. The engineer's preliminary estimate for the derrick at Albany was $3,771.70, the contractor's bid, $5,394.20. Excess metal (Albany) to the value of $1,078.00 has been authorized by the Canal Board. The value of work done at Albany during the year is $5,900, total done to date, the same.

W. L. Caler, Assistant Engineer, is in charge.

J. A. Laporte is the subcontractor for excavation, concrete, removing pavement and relaying pavement.

The work of removing pavement for derrick excavation began on April 18, 1918. Stone block pavement was replaced and grouting finished on May 13, and the derrick was raised on May 31. Steelwork on the derrick was completed on June 7, 1918.

Terminal Contract No. 106

This contract is for furnishing fourteen two-ton steam tractor cranes for Barge canal terminals. The following report relates to the one tractor crane delivered at Troy. The contract was awarded to the John F. Byers Machine Co., being signed on February 14, 1918. The engineer's preliminary estimate was $5,250.00 per crane, the contractor's bid, $5,265.00 per crane. The contract price as modified by alteration No.1 is $5,515.00 per crane. The value of work done at Troy during the year is $4,460, total done to date, the same.

C. A. Curtis, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board March 27, 1918, provides for housing the fourteen cranes under this contract. It increases the contract price by $250 per crane.

The crane was delivered at the Troy site and assembled the latter part of June, but was not given an official test.

Terminal Contract No. 36 — *Cohoes*

This contract is for constructing a terminal at Cohoes. It was awarded to the Troy Public Works Co., being signed on March 27,

1917. The engineer's preliminary estimate was $61,000.00, the contractor's bid, $57,600.00. The value of work done during the year is $8,100, total done to date, the same.

F. W. Harris, Assistant Engineer, is in charge.

The contractor has completed three fifty-foot sections of dock-wall at the north end of the terminal and has placed coffer-dam for two more sections.

ERIE CANAL, MOHAWK RIVER RESIDENCY

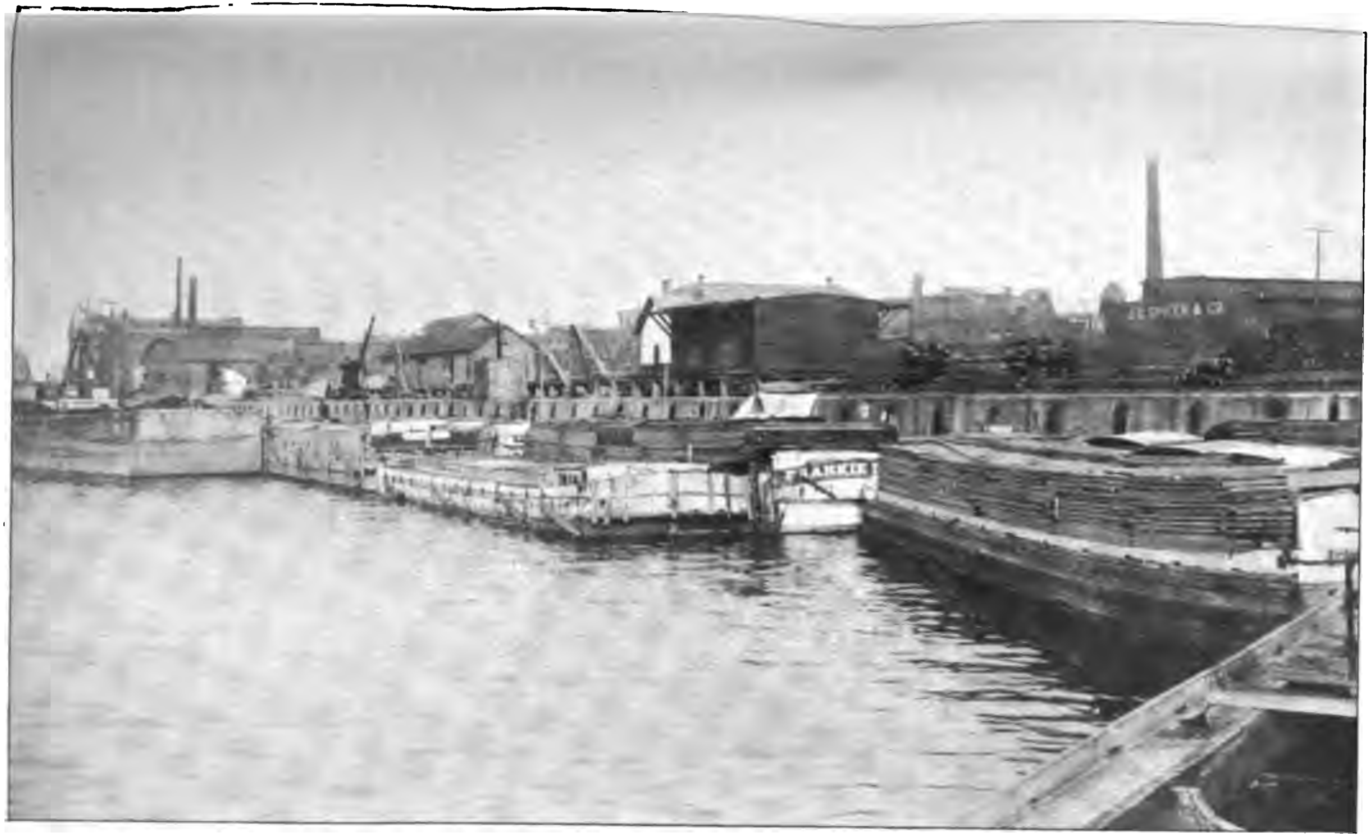
Assistant Engineer M. E. James reports:

For several years past, the Mohawk River residency extended from Mindenville on the west to Rexford on the east, a distance of 54.2 miles. On April 1, 1918, when residency office No. 2, Erie canal, located in the Parker building at Schenectady, was closed, the Mohawk River residency was extended 14.2 miles on the east, to Crescent, making the total length of this residency 68.4 miles.

Reports are given on the following contracts: Contracts Nos. 118, 129, 135, 150, 155, 180 and 185, the work order and special agreement of contract No. 20-D, terminal contracts Nos. 8-P, 10-P, 12-F, 64 and 214, and the portions of terminal contracts Nos. 103-A, 106 and 204 within this residency. Report is also made on the removal of bars in the Barge canal channel under two agreements made by the Superintendent of Public Works, one with Holler & Shepard, dated April 13, 1918, and one with the American Pipe and Construction Co., dated April 22, 1918, in connection with which the engineering work is performed by forces from this office.

During the past year the residency office has been maintained in the Mark building, Amsterdam. All appropriation maps, release and retention maps and flood maps mentioned in the following report have been prepared in the residency office, also the location and contour maps which accompanied the claim reports.

The engineering force on this residency during the year has been engaged at various times in making observations along the Mohawk river when floods occurred, marking high-water limits and getting the elevations of these heights. Considerable data



BARGE CANAL TERMINAL (LOWER) AT TROY

At the far end of the warehouse, trucks have access to the dockwall, while railroad tracks lie along the wall at the near end. The terminal is equipped with derricks for transferring freight.

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were collected and tabulated during the year for the standardization of gages located within the limits of this residency. The flood of February 26, 1918, at South Chuctanunda creek was investigated and data collected and tabulated. During the past year rain gages have been installed at lock No. 8, Scotia, and lock No. 14, Canajoharie.

Several properties at various localities within this residency were investigated in connection with claims against the State. Some time was spent by the engineering forces in going over other properties with claim agents of the Department of Public Works. A report was also rendered on the advisability of placing protection along the Fagel property, located on the north bank of the Mohawk river about 1½ miles west of lock No. 8, at Scotia. A report was made to the Division Engineer relative to the cost of a right of way and road to the Kemeter and Windbiel properties near lock No. 11, Amsterdam.

In October, 1917, the Department of Public Works did considerable sweeping of the Barge canal channel east from lock No. 8, at Scotia, and this work was inspected by engineers on this residency and a report of the obstructions found was tabulated and sent to Albany. A general report was made, covering the entire residency from Mindenville to Rexford and showing where bars and obstructions in the Barge canal channel were located, as determined by members of this Department.

During the year minor accidents occurred to boats navigating the canal and reports on these accidents have been made to the Division Engineer.

At dam No. 5, Rotterdam, considerable information was obtained in connection with the condition of this dam and lock. Many plans showing the progress of this work and tabulation of the information obtained have been prepared and sent to Albany. The preparation of separate sets of plans and sections, showing just what work has been done at dam No. 5 at different times has been started in the residency office and is well progressed to date.

A report was made on the application of the American Locomotive Co. for a grant of lands under water opposite their plant in Schenectady. A survey in connection with this grant was made and mapped and forwarded to Albany. After acquiring this land, the American Locomotive Co. constructed riprap protection along the bank. Engineers from this residency inspected this work and submitted a report.

A detailed report in connection with work necessary for maintenance of the canal for the coming year was made during the fall of 1917.

In October, 1917, an investigation was made of the bridge-rollers and stud-bolts in the bridges at dams Nos. 5 to 11, inclusive, and a report on their condition was submitted.

Plans showing the filling in of the Barge canal channel just below lock No. 8 at Scotia were submitted. This preliminary information was for work now being done by Holler & Shepard under agreement of April 13, 1918. Sections and data were prepared and sent in for plans of work to be done under contract No. 185 at lock No. 8, Scotia, and lock No. 9, Rotterdam. Maps showing plan and profile of the Chuctanunda Gas Co. property at Amsterdam were submitted to Albany. These preliminary data were for the preparation of plans for terminal contract No. 12-F, which contract has been let and completed during the past year. Plans were prepared and soundings taken, showing conditions at the Rexford aqueduct. This information was for the preparation of plans for contract No. 180, which contract has been let and completed during the year. Plans and profiles of the approaches to the Schenectady terminal were submitted, to be used in the preparation of plans for terminal contract No. 8-P, which contract is now in process of construction. A plan showing the condition of the terminal wall at Amsterdam was submitted, to be used in connection with the preparation of plans for terminal contract No. 214, construction under which contract is now in progress.

Surveys of the two approaches to the bridge at dam No. 5, Rotterdam, were made in connection with the proposal to turn these approaches over to the towns on each side of the river. Maps have been prepared from these surveys and forwarded to Albany, but in an uncompleted condition. The decision of certain matters in this case have not yet been given, consequently the maps could not be completed.

When navigation opened on this section of the canal for the season of 1918, it was necessary to locate the buoys and stake lights for marking the Barge canal channel and considerable time was devoted to this work by employees on this residency. During the past year many buoys were displaced, owing to floods and other causes. These were replaced by the Department of Public Works with the assistance of engineers from this Department.

The final estimate for contract No. 20-D, comprising approximately 1,300 sheets, was completed during the year and forwarded to Albany. The final estimate for contract No. 20-D, special agreement, was also forwarded to Albany. Final accounts for the extra work order dated November 14, 1916, on contract No. 20-D and for the extra work order dated June 5, 1916, on contract No. 118, were also prepared and submitted to Albany. Eleven partial accounts for the extra work order dated January 15, 1917, contract No. 20-D, repairs to dam No. 5 at Rotterdam, have been checked and sent to Albany during the year.

In my report of last year I mentioned that Mr. E. D. Hendricks, Senior Assistant Engineer, formerly in charge of this office, and Mr. C. E. Vedder, Junior Assistant Engineer, of this office, had volunteered and enlisted in the U. S. army. During the past year Mr. A. G. Austin, Assistant Engineer on this residency, volunteered and enlisted in the U. S. army. Mr. Stephen Zierak, Laborer in this residency, was drafted in the National army and Howard S. Deal, Boatman, volunteered and enlisted in the 23d U. S. Engineers during the year. I understand that Messrs. Hendricks, Vedder, Deal and Zierak are now located "somewhere in France." I wish to report also that the remaining men on this residency have shown their patriotism by liberally subscribing to liberty loans, war savings campaigns, Red Cross, War Chest funds, etc.

During the past year of navigation on this river section of the canal, boatmen have been compelled to tie up along the line on account of floods, and, in a few cases, for repairs, etc. In most cases this was done at terminal walls, if one was located near at hand. If not, it was necessary to use the guide-walls of the nearest lock. Although this has not yet congested traffic on the canal, it may do so when traffic has increased. Hence, to take care of increased traffic and emergencies, such as accidents or floods, I believe that suitable mooring places should be provided at convenient intervals along the river according to a plan to be developed by a study of conditions. I take the liberty to mention this matter, since I believe it to be a coming necessity in connection with the maintenance of the canal.

On the site of old contract No. 20-B a right-to-flood survey and map was made for lands of Peter F. Nellis, and sent to Albany. Surveys and investigations in connection with buoys have been made. Records have been searched and data compiled in connection with the claim filed by S. Pearson and Son, Inc.

On the site of old contract No. 20-C an appropriation survey and map was made for lands of Jay Van Dusen, and sent to Albany. Surveys and investigations in connection with buoys have been made. On claim No. 14,969, Byron Miller, claimant, a report has been made, together with the usual location map, showing the property claimed to have been damaged.

The reports of surveys on other contracts are given with the reports of those contracts.

During the past year all work mentioned in the report for this residency has been under my supervision and direction.

Contract No. 20-D

This contract, which was for dredging a channel in the Mohawk river from Yosts to Rexford, was completed last year, but two work orders under this contract had not been finished. The amount paid on extra work orders during the year is $102,808.26, total to date, $152,229.52.

A. G. Austin, Assistant Engineer, was in charge until January 15, 1918; now Wm. M. Griffith, Junior Assistant Engineer, is in charge of this work.

An extra work order dated November 14, 1916, provides for placing second-class riprap below dam No. 4, at Scotia. The final account, amounting to $18,007.20, was approved by the Canal Board October 3, 1917.

An extra work order dated January 15, 1917, provides for the construction of a coffer-dam around the north span of dam No. 5, at Rotterdam, and making repairs to this dam. Work to the value of $87,004.26 has been done during the year.

The placing of riprap below dam No. 4 with the derrick-boat continued during July and the work was completed on August 21, 1917.

The work at Rotterdam has progressed as follows:

Prior to the beginning of this fiscal year, a coffer-dam extending from the upper end of the river wall of lock No. 9 to the north pier of dam No. 5 had been started. During July, 1917, about two-thirds of the round-pile bents were driven, starting from the river wall. By the end of July this portion of the coffer-dam was completed except for filling and deck-planking. Large timbers hauled from the Rexford aqueduct were used for a crib, which was built at the north pier. During July several round piles were driven to replace those broken off by the flood of June, 1917. Work on the coffer-dam was well advanced during the month of August, 1917. About 50 steel piles remained to be driven along the outside face and the crib at the north pier was nearly finished. All the braces, wales, caps, etc., were in place. The driving of wooden and steel piling for the coffer-dam was completed and the pile driver and scow used for this work were removed from the site early in September. Material from excavation near Cranesville was hauled by scows and dumped along the coffer-dam at dam No. 5, and, the latter part of September, dipper-dredge No. 1 completed filling the coffer-dam and banking it with material. During the early part of October, additional banking was placed against the coffer-dam and the dredge and equipment were removed from the work.

As the water within the coffer-dam was lowered, additional wales and braces were placed to strengthen the wooden sheet-piling along the inside face and also the deck-planking was placed. The slab of concrete placed under contract No. 119 was first unwatered on October 11, 1917, and a boiler and steam drills were set up. The drilling of holes through the concrete slab placed under contract No. 119 and the sill of the dam proper placed under contract No. 8, to determine the condition of the foundation under the dam, was begun immediately and continued through the months of October, November and December, 1917, and January and February, 1918. During March, 1918, high water and ice, together with cold weather conditions, interrupted the drilling considerably.

A small amount of drilling was done in April, 1918. Three-inch holes were drilled through the sill of the dam, the apron of the dam, the slab above the sill of the dam and the concrete placed under extra work order of November 18, 1912. In all, 104 holes were drilled in the north span of the dam, 10 holes in the middle span of the dam near and below the north pier, 20 holes through the floor of the lock chamber and one hole through the step at the lower end of the lock on the outside of the river wall. During November and December of 1917, large holes, 2 ft. by 2 ft. square, were cut through the sill of the dam above the cut-off wall and through the slab of concrete placed under contract No. 119. Thirteen of these holes were cut through for the purpose of placing gravel filling under the dam. Progress sheets, showing the location of these holes and information obtained, were sent to the Division Engineer at short intervals. From the information obtained it was found that cavities, or voids, ranging up to 14 cubic feet, existed under the sill of dam No. 5 and also that there was a large cavity existing under the north pier and a portion of the middle span of the dam. The erosion under the dam extended almost to the bottom of the sheeting placed in the cut-off wall.

A flood occurred, October 30 to November 2, and delayed the work at this dam. During the flood the coffer-dam was allowed to fill and the water reached a height of about 3.5 feet above the coffer-dam, the deck of which is at elevation 241.0. When the flood subsided, it was found that no material damage had resulted to the coffer-dam and the work was resumed. During November a considerable amount of gravel was hauled from the spoil-bank on the south side of the river to the site inside of the coffer-dam, the material being deposited through a chute from the bridge overhead. This work was continued during December, 1917.

All gates of dam No. 5 were raised from the river December 6, 1917, for the winter. About the middle of the month, the uprights and two gates of the dam adjacent to and south of the north pier were lowered into position for the purpose of diverting the water so that the work of drilling holes through the apron of the dam below the gates could be continued. A small timber dam about 50 feet long, extending south from the south side of the north pier, was placed in position at the coffer-holes below the two gates for diverting the water, and the gates of the dam, being no longer required for that purpose, were raised from the river on December 20, 1917. After the gates of the dam had been raised, considerable trouble was experienced from high water in the lower pool, and, to carry on the work of drilling, it was necessary to construct coffer-boxes about 6 feet square, in which the drills were placed.

During January, 1918, the hauling of gravel, cement and coal was continued, also the drilling and filling of holes with gravel and grout. Cold weather conditions through the month interrupted the work considerably.

During February an ice breaker was constructed at the crib in front of the north pier. The work progressed until about February 20, when the ice in the river broke up and moved out. Practically no damage was done to the coffer-dam. From February 20 the work was practically at a standstill, owing to ice, snow and high water conditions. General repair work was carried on, however, and material was received and stored. This general work was continued through the month of March. Also 40-foot piles were cut in the woods and hauled to the site of the work. Additional coffer-boxes were constructed and slight repairs made to the coffer-dam. The latter part of March, a small force was engaged in cutting ice away from the lower lock-gates, also from the scow in the lock and cleaning the lock of ice. During this month the sunken pavement behind the lock was raised. Pipe lines for drills were placed and the last two days of the month, the water having receded and the river being free of ice, the contractor placed drills within the coffer-dam and started drilling.

During April a diver was engaged in locating the various holes drilled and in placing three-inch pipes in them for grouting. Grouting was carried on with two grout mixers. This work of grouting was continued throughout May and June.

The lower gates of dam No. 5, in the south and middle span, were lowered into position on May 3, 1918, and the top gates were lowered and the water raised to pool elevation a few days later. During May and June the contractor received several carloads of cement and also several hundred cubic yards of sand from the spoil-bank at Pattersonville.

The latter part of May most all the three-inch drilled holes and the large 2-ft. by 2-ft. holes had been filled with gravel and grouted. These holes, with a few exceptions, have been sealed. On June 9, a well-drill outfit was delivered and on the 12th it started drilling eight-inch holes through the sill of the dam on a line about 15 feet from the river wall of the lock. Eight of these holes have been drilled to June 30, 1918.

The total material placed under the sill of the dam, the floor of the lock and the north pier to June 30, 1918, is about as follows: 240 cu. yds. of gravel placed through the large square holes under the sill of the dam and the north pier; 600 cu. yds. of 1 : 1 grout placed through the three-inch holes under the sill and the north pier; 45 bags of cement, used in a 1 : 2 : 4 mixture of concrete, placed through the large square holes under the pier; 27 cu. yds. of gravel placed through the eight-inch holes under the sill of the dam; 21 cu. yds. of concrete placed through the eight-inch holes under the sill of the dam, and 35 cu. yds. of 1 : 1 grout placed through the three-inch holes under the floor of the lock-chamber.

Construction work at this site did not interrupt navigation during the past year. Owing to cross currents, some difficulty was experienced in entering the lock from the lower pool. Under this work order pile clusters of five piles were driven below the lock and these have been an aid to navigation.

During the past year, surveys were made and appropriation maps prepared and sent to Albany for releasing parcel No. 4,017, N. Y. C. R. R.; parcel No. 4,023, N. Y. C. R. R., and parcel No. 3,329, Dominico Falduta.

Also during the past year, properties were investigated and reports on the following claims, together with maps showing the topography and location of the properties involved, were made and forwarded to the Division Engineer at Albany: David Chase, claim No. 15,277; Mary Cole, claim No. 15,276; Ross Clark, claim No. 15,275; Frank Carbone, claim No. 15,258; LeRoy DeNise, claim No. 14,309; Joseph Duesler, claim No. 15,265; Peppino Falco, claim No. 14,311; Negola Fasolo, claim No. 14,317; Ada Fero, claim No. 15,261; Albert H. Goodman, claim No. 15,267; Nicolas Jiombottista, claim No. 14,301; Georgianna Gray Jewett, claim No. 15,256; William Koehler, claim No. 15,259; Harry McKenney, claim No. 15,270; Pietro Marcucci, claim No. 15,269; Paul Peters, claim No. 15,274; George W. Putman, claim No. 15,262; Emilie Sievert, *et al.,* claim No. 15,268; Hanna M. Seburn, *et al.,* claim No. 15,264; Mina Southard, claim No. 15,266; Dora Tollner, claim No. 15,260; John Ulrich, claim No. 14,233; Herrick B. Willsey, claim No. 15,263; Cora C. Young, claim No. 15,257.

Contract No. 20-D — *Special Agreement*

This agreement provides for completing certain work which had been added to contract No. 20-D by alterations. It was signed by the American Pipe and Construction Co., contractors for contract No. 20-D, and by the Superintendent of Public Works on April 2, 1917. The value of work done during the year is $42,403. The work was accepted October 31, 1917, and the final account, amounting to $64,815.90, was approved by the Canal Board January 30, 1918.

A. G. Austin, Assistant Engineer, was in charge until January 15, 1918. Since that time, M. J. Quinn, Junior Assistant Engineer, has been in charge.

Range stakes and gages have been set and maintained for the contractor during the past year for finishing the work on this contract. Original sections have been taken ahead of the dredges and at the end of each month, when the dredge was working, for computing the monthly estimate of work done.

The plant on this contract during the year, consisting of two dipper-dredges, three derrick-boats and a fleet of tugs and bottom-dump scows, have progressed the work on this contract to completion during the year.

Dipper-dredge No. 1, during July, 1917, excavated under alteration No. 9, just below the B. & M. R. R. bridge, between Stas. 1550 and 1560, also placed bank protection along the north bank between Stas. 1515 and 1495 and along the south bank between Stas. 1473 and 1455. The excavation by this dredge below the B. & M. bridge was continued during the month of August and finished on September 18, when the dredge was dismantled and moved to lock No. 9 at Rotterdam for filling the coffer-dam under extra work order for repairs to dam No. 5 at that place. The filling of the coffer-dam was completed during October, 1917, and the dredge was removed from the contract and taken to Waterford.

Dipper-dredge No. 3, during July, 1917, excavated below dam No. 6 at Cranesville under alteration No. 9 and finished the work at this point August 14, when the dredge moved to the SanSai kill stream entrance and removed some refill material, which was spoiled along the coffer-dam at dam No. 5. The excavation at the SanSai kill stream entrance was finished August 17, and the dredge was moved to the harbor at Cranesville. During September, 1917, this dredge was taken to Schenectady and did some excavation between Stas. 1215 and 1212, opposite the American Locomotive Works, and completed the removal of the Freeman's bridge piers at Sta. 1200. The stone from the bridge piers was spoiled as wash wall at the American Locomotive Works bank protection work. This dredge finished its work in this vicinity September 13, and returned to the harbor at Cranesville.

The foregoing work done by the dipper-dredges Nos. 1 and 3 completed the work under contract No. 20-D, special agreement, dated April 2, 1917.

Contract No. 150

This contract is for the construction of a concrete apron below the head-gates of the Vischer Ferry dam. It was awarded to the Brown & Lowe Co., being signed on December 1, 1916. Construction work began December 6, 1916. The engineer's preliminary estimate was $20,300.00, the contractor's bid, $21,780.00. The value of work done during the year is $1,283. The work was accepted September 5, 1917, and the final account, amounting to $22,273.00, was approved by the Canal Board October 9, 1917.

J. C. Bell, Assistant Engineer, was in charge.

Work under this contract was completed within a few days after the beginning of the fiscal year.

Contract No. 155

This contract is for furnishing and installing seven hoists for the operation of the bulkhead gates in the north end of the Vischer Ferry dam. It was awarded to Lupfer & Renick of Buffalo, N. Y., being signed on January 31, 1917. Construction work began February 28, 1917. The engineer's preliminary estimate was $9,998.00, the contractor's bid, $11,586.00. The value of work done during the year is $8,478. The work was accepted and the final account, amounting to $11,327.86, was approved by the Canal Board May 1, 1918.

C. B. Tebo, Engineering Assistant, has been in charge.

An extra work order dated March 25, 1918, provides for repairing hoists damaged at the time of the spring flood.

At the beginning of the year the hoists had been placed in position on the dam and some work done on the gates. No work was done during July, August and September. In October stop-logs were placed at gate No. 7 and the gate was removed, repaired, painted and replaced. At gate No. 6 stop-logs were placed, the gate removed and repairs begun. The work during October was delayed considerably, owing to bad weather conditions. Work was continued during November and finished on gates Nos. 5 and 6. By December 1 about 53 per cent of this contract had been completed. In December, part of the old racks were removed and stored and the new racks placed in position and work on gates Nos. 3 and 4 was completed. During January, 1918, work on gates Nos. 1 and 2 was finished and all the hoists had been set and testing started. During the first fifteen days of February, five gates were completed and tested. In March the remaining two gates were completed and tested, completing this contract.

During February, 1918, owing to extreme cold weather, the gates became frozen and about February 20 the weather moderated and the river rose to flood stage. To relieve the flood conditions, forces of the Superintendent of Public Works proceeded to raise the bulkhead gates at the Vischer Ferry dam and in doing so broke some of the gears on the hoists which had just previously been completed, tested and found satisfactory. Also they loosened the anchorages on some of the machines. To repair this damage an extra work order was issued under date of March 25, 1918.

During May, 1918, the new gears were delivered at the site of the work. Two of them, upon being machined, were found to be defective and were rejected. The balance of the new gears were installed during the month of June and the machines were satisfactorily anchored in place. As soon as the two defective gears are placed satisfactorily, the final account of this extra work order will be rendered.

Contract No. 180

This contract is for removing a portion of the aqueduct at Rexford and completing the adjacent canal-prism excavation. It was awarded to the Dunbar & Sullivan Dredging Co., being signed on March 15, 1918. Construction work began April 17, 1918. The engineer's preliminary estimate was $17,840.00, the contractor's bid, $15,958.00. The value of work done to date is $15,810.

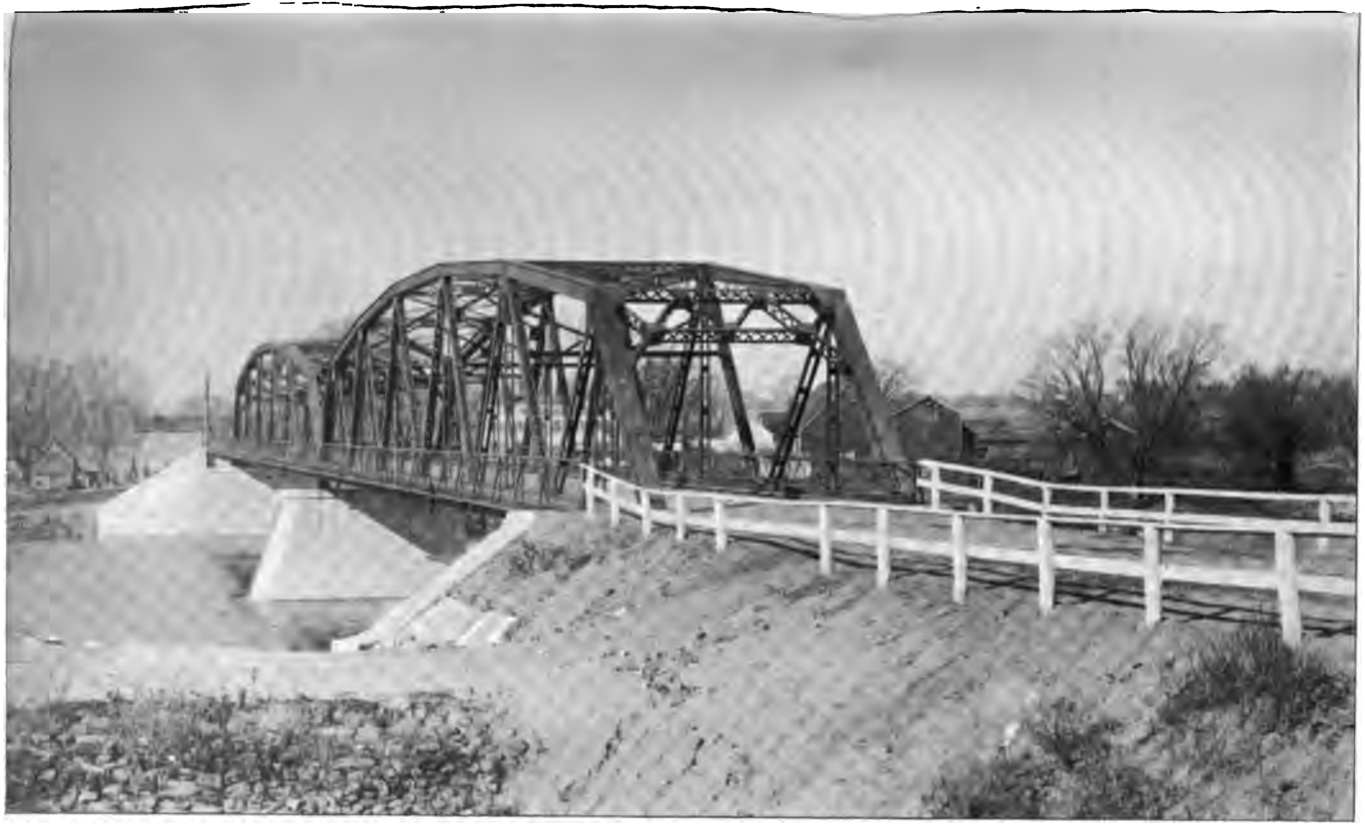
M. J. Quinn, Junior Assistant Engineer, is in charge.

On April 16, 1918, two derrick-boats and two tugs were moved to the site of the work, and on the 17th the contractor started removing the old masonry in the piers which are to be removed. During May the removal of these piers was completed, the arches were removed and the temporary bridge, which had been erected under an extra work order of contract No. 20-D, was removed and stored in the trunk of the aqueduct outside the limits of this contract. During June the prism excavation under this contract was completed and the work was practically finished.

When the temporary wooden bridge was being removed, it fell into the river, through negligence on the part of the contractor's forces, and broke several of the timbers in the trusses and bent the tie rods. The contractor is repairing this damage. The final estimate is well started and will be rendered as soon as the wooden bridge has been satisfactorily repaired.

Contract No. 129

This contract is for the construction of the substructure, superstructure and approaches of Freeman's bridge over the Mohawk river near Schenectady at about Barge canal center line Sta. 1198 + 93. It was awarded to The Foundation Co., being signed on June 6, 1916. Construction work began June 14, 1916. The engineer's preliminary estimate was $80,976.50, the contractor's bid, $87,390.80. The contract price as modified by



Freeman's Bridge over the Mohawk River near Schenectady

Under one span runs the Barge canal channel, while under the other the river flows in its natural channel.

alterations Nos. 1 and 2 is $89,900.80. The value of work done during the year is $46,862. The work was accepted December 4, 1917, and the final account, amounting to $82,201.62, was approved by the Canal Board, January 23, 1918.

Alteration No. 2, approved by the Canal Board October 16, 1917, provides for placing concrete pavement on the north approach. It increases the contract price by $1,430.00.

The erection of the steelwork was finished and the bridge proper completed and painted by October 11, 1917. The contract work was finished November 30, 1917.

Contract No. 185

This contract is for improving the river channel below the movable dams at Scotia and Rotterdam. It was awarded to Robert Wetherill, Receiver, American Pipe and Construction Co., being signed on June 24, 1918. Construction work has not begun. The engineer's preliminary estimate was $230.550.00, the contractor's bid, $154,395.00.

M. J. Quinn, Junior Assistant Engineer, is in charge.

The contractor has been delivering coal at convenient places for use on the dredge which is to be engaged on this work.

The engineering force has been taking original cross-sections and laying out the work.

Contract No. 118

This contract, which was for the construction of a new city highway bridge across the Mohawk river at Amsterdam, was completed last year, but the extra work order dated June 5, 1917, which provided for furnishing and installing six brass Yale locks for signal lamps, had not been finished. The final account for this order, amounting to $31.05, was approved by the Canal Board December 4, 1917. The total amount paid on extra work orders on this contract is $2,031.05.

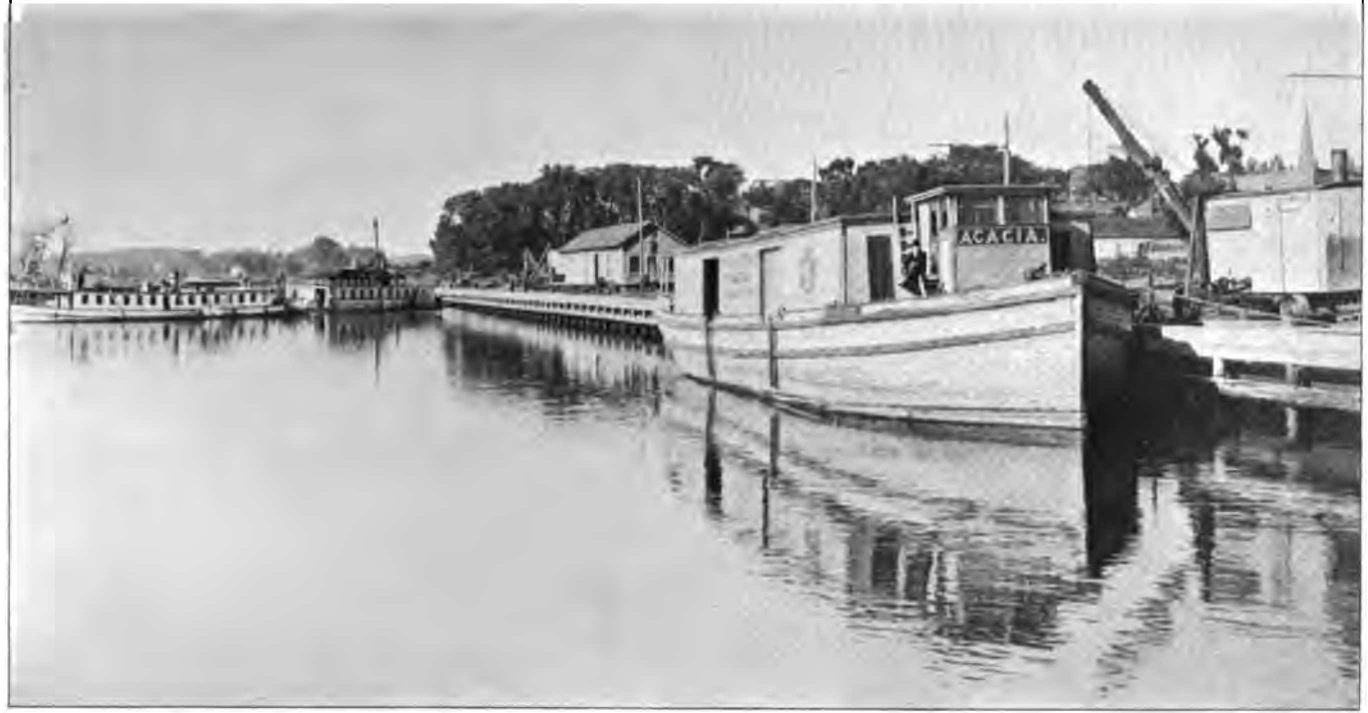
Contract No. 135

This contract is for excavating a point of land on the south bank of the Mohawk river between the bridge and dam No. 10 at Canajoharie and performing incidental work. It was awarded to the Great Lakes Dredge & Dock Co., being signed on September 18, 1916. Construction work began April 24, 1917. The engineer's preliminary estimate was $78,052.00, the contractor's bid, $57,038.00. The value of work done during the year is $9,417. The work was accepted October 9, 1917, and the final account, amounting to $48,637.34, was approved by the Canal Board November 20, 1917.

The excavation of the point of land was finished with the 20-inch hydraulic dredge *Massachusetts*, the material being spoiled in the old canal. On August 8, 1917, when the contract was nearly completed, the pump on this dredge gave out and the dredge was then dismantled and removed from the site on August 15. The pontoons and discharge pipe were removed on August 21. The work of sloping the south bank of the channel was completed on September 21. This finished the contract.

Terminal Contract No. 204

This contract is for constructing temporary warehouses at Schenectady, Amsterdam, Fonda, Ilion and Frankfort. The following report relates to the warehouses at Schenectady, Amsterdam and Fonda. The contract was awarded to Byron, Forman and Riggs, Inc., being signed on March 12, 1917. On April 2, 1917, it was assigned to Kennedy & Scullen and this assignment was approved by the Superintendent of Public Works May 2, 1917. The engineer's preliminary estimate was $1,160.00 for Schenectady, $1,160.00 for Amsterdam and $815.00 for Fonda; the contractor's bid, $1,058.35 for Schenectady, $1,058.35 for Amsterdam and $738.90 for Fonda. The contract price as modified by alteration No. 1 is $4,037.60 for Schenectady, $5,969.60 for Amsterdam and $4,037.60 for Fonda. Excess iron and steel fastenings to the value of $12.60 ($7.20 at Amsterdam and $5.40 at Fonda) have been authorized by the Canal Board. The work was accepted and the final account, amounting to $19,023.35, was approved by the Canal Board October 23, 1917. The final account for Schenectady was $4,046.30, for Amsterdam $5,962.65 and for Fonda $4,051.30. The amount paid on extra work orders is $117.61 at Schenectady, $54.59 at Amsterdam and $117.61 at Fonda, all during the fiscal year.



Barge Canal Terminal at Schenectady

General view of the terminal. A boat owned and operated by the General Electric Co. for its own traffic is seen in the foreground.

An extra work order dated July 2, 1917, provides for placing galvanized wire screens over the windows and doors of the warehouses. The final account, amounting to $272.95, was approved by the Canal Board October 23, 1917. The cost at each warehouse was $54.59.

An extra work order dated July 9, 1917, provides for placing door-guards on the warehouses at Schenectady, Fonda, Ilion and Frankfort. The final account, amounting to $189.52, was approved by the Canal Board October 23, 1917. The cost at Schenectady and Fonda was $63.02 each.

These warehouses were practically finished by July 1, 1917, with the exception of the lighting systems, which have since been completed.

Terminal Contract No. 8-P

This contract is for paving the terminal site at Schenectady. It was awarded to James P. Kelly, being signed on April 15, 1918. Construction work began in May, 1918. The engineer's preliminary estimate was $8,400.00, the contractor's bid, $8,400.00. The value of work done to date is $1,000.

M. J. Quinn, Junior Assistant Engineer, is in charge.

Excavation for macadam pavement in the vicinity of the freight-house is nearly finished; also this macadam pavement is practically completed. The paving bricks have been received and stored on the site of the work and samples have been tested and found satisfactory, but the laying of this pavement has been delayed because the contractor for the railroad and crane tracks has been unable to get these rails delivered.

Terminal Contract No. 64

This contract is for constructing railroad and crane tracks on the Barge canal terminal at Schenectady. It was awarded to Robert Wetherill, Receiver, American Pipe & Construction Co., being signed on April 24, 1918. Construction work began May 1, 1918. The engineer's preliminary estimate was $9,000.00, the contractor's bid, $10,021.30. The value of work done to date is $2,150.

M. J. Quinn, Junior Assistant Engineer, is in charge.

An extra work order dated June 4, 1918, provides for making alterations and extensions to the electrical equipment at the Schenectady terminal freight-house.

During May a small force scraped dirt from the old macadam and did excavating to subgrade for the tracks. During June the work was held up because, owing to congested freight conditions, the contractor was unable to get his shipment of ties, rails, etc. In the latter part of June a carload of rails, bolts, fish-plates, etc., was received, as were also the ties. These have been unloaded and hauled to the site of the work. During the latter part of the month the contractor was making preparations for laying track. A small amount of excavation has been made.

Terminal Contract No. 103-A

This contract is for furnishing, installing and testing two portable package-freight conveyors for Barge canal terminals. One of these is to be installed at Schenectady. The contract was awarded to the Brown Portable Conveying Machinery Co., being signed on October 3, 1917. The engineer's preliminary estimate was $3,900.00 each, the contractor's bid, $4,100.00 each.

This conveyor has not been delivered. No payments have been made.

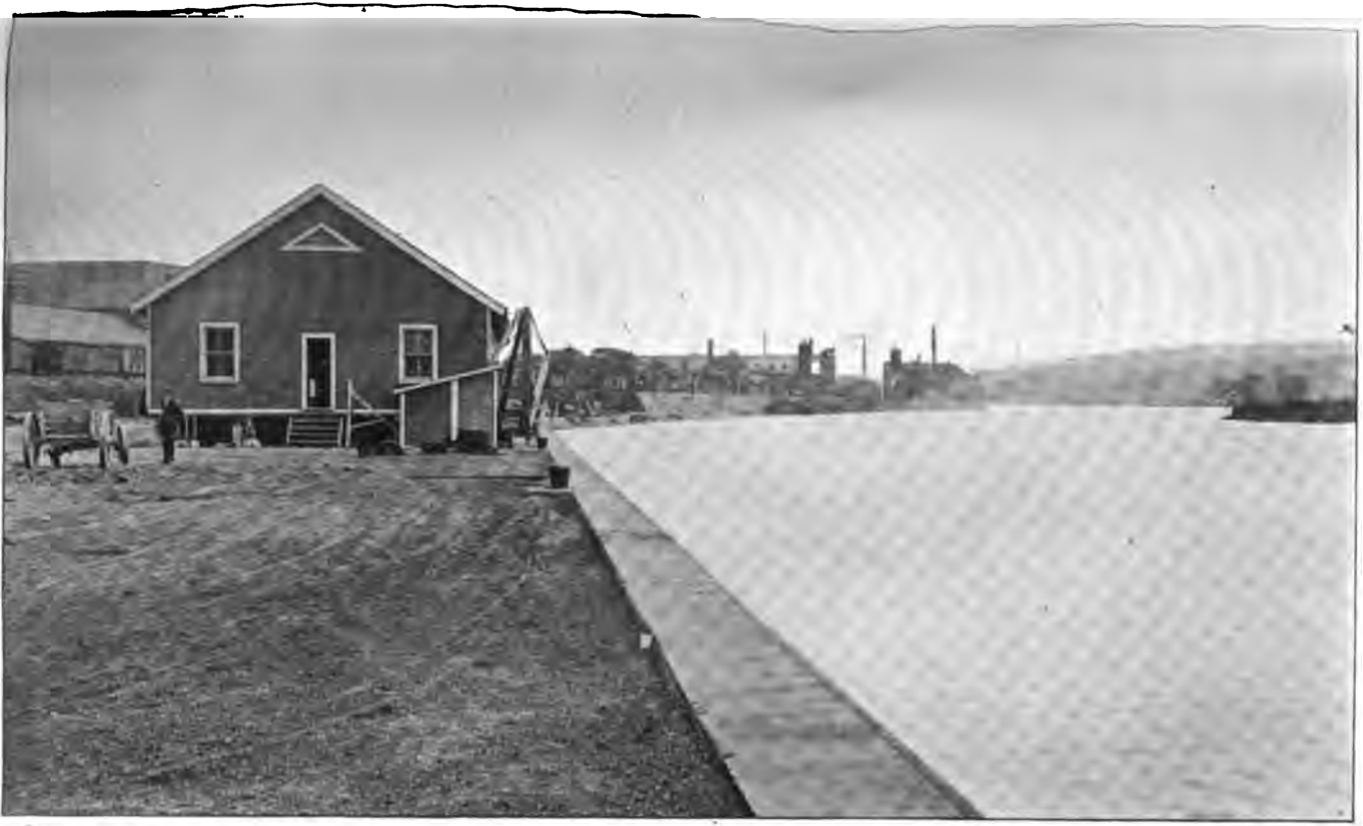
Terminal Contract No. 106

This contract is for furnishing fourteen two-ton steam tractor cranes for Barge canal terminals. One of these is for Schenectady and one for Amsterdam. It was awarded to the John F. Byers Machine Co., being signed on February 14, 1918. The engineer's preliminary estimate was $5.250.00 per crane, the contractor's bid, $5,265.00 per crane. The contract price as modified by alteration No. 1 is $5,515.00 per crane. The value of work done at Schenectady to date is $5,510.

M. J. Quinn, Junior Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board March 27, 1918, provides for housing the fourteen cranes under this contract. It increases the contract price by $250.00 per crane.

The crane and housing for the Schenectady terminal was delivered at the terminal site in June, 1918. This machine was assembled and found satisfactory on test. The crane for the terminal at Amsterdam has not been delivered.



BARGE CANAL TERMINAL AT AMSTERDAM

The traffic at Amsterdam was so heavy that a second warehouse had to be erected. The view shows the excavation in the foreground preparatory to laying pavement and building the second house, which is to occupy a site at the extreme left.

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Terminal Contract No. 214

This contract is for constructing a frame freight-house and laying pavement at Amsterdam. It was awarded to the Kennedy & Scullen Construction Co., being signed on April 26, 1918. Construction work began May 20, 1918. The engineer's preliminary estimate was $16,478.00, the contractor's bid, $16,323.00. The value of work done to date is $6,180.

A. P. Mussi, Assistant Engineer, is in charge.

This contract includes all of the pavement at the Amsterdam terminal and a second freight-house, one having already been built under an earlier contract. Work under this contract was started on May 20, and before the end of the month the site of the new freight-house had been graded and excavation for pavement east and west of the existing freight-house, for the curbing east of the freight-house and for the new freight-house piers had been made; also the concrete for two piers on the east end of the building and about 153 lin. ft. of concrete curbing at the east end of the terminal had been placed.

During June good progress was made. The concrete piers for the new freight-house were completed. The curbing east of the existing freight-house was all placed except about 40 feet, also the curbing on the west side and in front of and around the new freight-house. Excavation has been made and forms are about ready for the concrete curbing still to be placed under this contract. About 175 lin. ft. of the concrete foundation for pavement has been placed east of the existing freight-house, also that portion west of the building and in front of the new freight-house. The 8-in. x 12-in. stringers were placed and bolted to the piers of the new freight-house and the framework was erected. The flooring has been laid, siding put on, roofing boards placed, the wainscoting completed and the guard-studs for the large sliding doors set. The metal track for the sliding doors has been placed and the door and window trim well progressed. The work of placing the composition roofing has been started. By request of the Superintendent of Public Works the contractor has been working his forces nine hours per day to hasten completion of the work.

Terminal Contract No. 12-F

This contract is for constructing a woven wire fence adjacent to the roadway approach to the Amsterdam terminal. It was awarded to the Anchor Post Iron Works, being signed on April 16, 1918. Construction work began in June, 1918. The engineer's preliminary estimate was $1,289.00, the contractor's bid, $1,379.50. The work is finished ready for acceptance and the final account has been prepared. No monthly estimates were rendered.

A. P. Mussi, Assistant Engineer, was in charge.

This fence was fabricated in the shops of the Anchor Post Iron Works and shipped to Amsterdam. The material arrived during June, 1918, and the work of erection was started and completed during the month. The corner and gate posts and line posts along the easterly side were all set in concrete foundations and the fence erected in a satisfactory manner.

Terminal Contract No. 10-P

This contract is for paving the terminal site at Fonda. It was awarded to Patrick W. Mulderry, being signed on April 12, 1918. Construction work began in June, 1918. The engineer's preliminary estimate was $8,602,00, the contractor's bid, $8,700.00.

A. P. Mussi, Assistant Engineer, is in charge.

Excavation for the concrete curbing west of the freight-house has been completed and grading for brick pavement is started. The contractor has received the paving brick and stored them on the site of the work. The money value of the work being small, no monthly estimate has yet been rendered.

Canal Maintenance

REMOVAL OF BARS BELOW LOCK NO. 8, AT SCOTIA

On April 13, 1918, the Superintendent of Public Works entered into an agreement with Holler & Shepard for the removal of bars in the Barge canal prism below lock No. 8, at Scotia, payment to be on the basis of a specified daily rental for plant plus labor and material necessary to carry on the work. Two estimates, amounting to $8,834.47, have been approved by this office.

. The work has been looked after by M. J. Quinn, Junior Assistant Engineer, with office at Schenectady.

A dipper-dredge belonging to the above company left Fort Edward April 25, 1918, and arrived at Schenectady April 28, where it was set up. On April 30 it was moved to lock No. 8 at Scotia and began the excavation of the heavy gravel bar lying above grade within the Barge canal channel. The work was continued during May and June and by July about 15,000 cu. yds. of material had been removed and spoiled along the south bank of the river below the lock, where the General Electric Co. was building a new pumping station. The material excavated by the dredge was spoiled within reach of a derrick which the contractor for this pumping station had on the south bank of the river, and was subsequently used as backfill around the pumping station. Some of the excavated material was also spoiled in the north channel below the lock.

Canal Maintenance

REMOVAL OF BARS BETWEEN FONDA AND INDIAN CASTLE

On April 22, 1918, the Superintendent of Public Works entered into an agreement with the American Pipe and Construction Co., Robert Wetherill, Receiver, for the removal of bars in the Barge canal channel between Fonda and Indian Castle, payment to be on the basis of a specified daily rental for plant plus labor and material necessary to carry on the work. One estimate, amounting to $5,900.44, has been approved by this office.

The work has been looked after by A. P. Mussi, Assistant Engineer, from the Amsterdam office.

Dipper-dredge No. 3, belonging to the above company, left the harbor at Cranesville on May 4, 1918, and arrived at the Fonda terminal, where it was set up. It was ready to remove bars in the channel by May 10.

The sand bars found in May, 1917, near the Fonda terminal had shifted during the past winter and could not be found at that locality, so the dredge moved west to lock No. 13 at Yosts on May 13 and began excavating a large gravel bar along the lower guide-wall of lock No. 13. High water interrupted this work until May 15. On May 18 the removal of this bar was completed and the dredge started to move downstream, cleaning the channel to a point about one mile east of the lock. At this point another bar was located, the removal of which occupied the balance of the month. After the dredge had completed the removal of this bar, it cleaned the channel downstream to a point about 1½ miles east of lock No. 13, at Yosts, where another large bar was found. The dredge worked the balance of June on this bar.

To July 1, 1918, this dredge has removed about 17,500 cu. yds. The material removed during May and the first part of June from the bars at the lower guide-wall and at a point one mile east of the lock was spoiled along the north bank of the river and the material excavated the latter part of June from the bar at a point 1½ miles east of the lock was spoiled along the south bank of the river.

ERIE CANAL, RESIDENCY NO. 4

Senior Assistant Engineer E. A. Lamb reports:

This residency extends from 0.5 mile east of old lock No. 34, at Mindenville, to the Herkimer–Oneida county line, a distance of 27.8 miles.

In office work, besides the regular routine of weekly reports, correspondence, checking monthly estimates, etc., four appropriations have been mapped, checked and sent to the Division Engineer's office since June 30, 1917, and about 10 maps have been made to accompany reports to the Division Engineer on claims, complaints, etc., released land, applications for use of land, permits, etc. Also, the final estimates for contracts Nos. 18-A, 30, 30-A, 122, 153 and 158 and for terminal contract No. 208 have been finished and checked.

Buoy maps for locating the prism have been prepared and iron pins and pipe have been placed in the field and then located or indicated on the maps. This work was done for the purpose of setting buoys and channel lights. Thus far more or less difficulty has been experienced in preserving these points, for the reason that it is necessary to place some of the stake lights and markers on private property and the owner often intentionally removes them. I believe the State should own a right of way along the bank of the improved river section of the Barge canal.

During the year a record has been kept of the daily readings of the gage located on the dam for the hydraulic canal on West Canada creek, and of measurements of the daily flow through the head-gates of this canal.

The field work for the so-called finished-plan maps has been completed from Sta. 3869 + 78.89 to Sta. 4027. These maps have been plotted and sent to the Division Engineer's office.

Also, an offset center line has been established and monumented from Litle Falls, near Hansen island bridge, to Mohawk, near the new junction lock.

Blue Line Surveys

(Chapter 181, Laws of 1917)

After the blue line maps through the city of Little Falls were approved, the maps were divided into parcels and each parcel was given a number. Information for the description of these parcels has been prepared and sent to Albany.

This blue line work has since been continued from Barge canal center line Sta. 3868 + 78.98 to Sta. 4278. The line has been run and iron pins and monuments set at the various angle points. The topography has been taken over nearly the whole line. The base line has been plotted to a scale of 40 feet to the inch and also to a scale of 100 feet to the inch. The notes have been reduced and computed and the surveys checked with Government stations of the base line from Little Falls to lock No. 18 at Jacksonburg.

The Clinton ditch, or original Erie canal, base line and topography from Barge canal center line Sta. 3974 to Sta. 4078 has been plotted to a scale of 100 feet to the inch and the points are being staked out in the field.

The Rocky Rift feeder blue line has been run and topography taken. Two maps have been plotted, one to a scale of 100 feet to the inch, the other to a scale of 40 feet to the inch.

An offset center line has been run as a base line from about Barge canal center line Sta. 4055 to Sta. 4217, and monuments have been set, but no office work has been done.

From Jacksonburg, near lock No. 18, to a monument located a short distance west of the junction lock at Mohawk, a distance of 4.44 miles, the base line for the blue line maps has been established and the monuments for the same stretch are complete. This base line, as far as possible, has been tied to U. S. triangulation points.

Between Jacksonburg, Barge canal lock No. 18, and Fort Herkimer, east of old Erie lock No. 41, the courses for the northerly and southerly blue lines have been completed and adjusted and are ready for mapping as soon as the angle points are located in the field and marked with iron pins.

Reports are given on the following contracts: Contracts Nos. 18-A, 29-A, 30-A, 122-A, 133, 137 and 146 and part of No. 153, also terminal contracts Nos. 27-P, 37, 40 and 208 and those portions of terminal contracts Nos. 101 and 204 within the limits of this residency.

Contract No. 18-A

This contract provided for the completion of the canal from lock No. 16 at Mindenville to the westerly end of Little Falls, a distance of 8.91 miles. The contract was accepted December 13, 1916, and the final account, amounting to $1,668,069.38, was approved by the Canal Board April 12, 1917.

During the fiscal year just ended final payment has been made on one extra work order and the last extra work order has been finished and paid. The amount paid on extra work orders during the year is $8,991.95, total to date, $25,083.60.

An extra work order dated November 9, 1916, provided for repairs to the concrete stairway at lock No. 17, for changing the gearing on the lower gate of lock No. 17, to reduce the speed of operation, and for chipping concrete at end of lower approach wall, lock No. 17, to provide support for timber walks leading to cribs. The final account, amounting to $2,534.76, was approved by the Canal Board July 25, 1917.

An extra work order dated December 4, 1916, provided for placing concrete tops on the nine cribs below lock No. 17, together with board walks and snubbing-posts, for placing approximately 600 feet of guard-rail along the vertical wall at Little Falls, and for placing additional riprap in the vicinity of lock No. 16.

The final account, amounting to $8,302.75, was approved by the Canal Board December 4, 1917.

There still remain within the limits of the contract a Lidgerwood excavator, located above the entrance to lock No. 16 on the north embankment, a steam-shovel near the high bridge on the south side of the prism, and, near the temporary lock, a drill-boat, which was at one time used as a hydraulic dredge. This drill-boat is sunk. A guy derrick, a quantity of junk, etc., are located near the dive culvert.

Contract No. 137

This contract is for driving steel sheet-piling at dam No. 10, Canajoharie, and other incidental work. It was awarded to J. A. Laporte, being signed on October 13, 1916. Construction work began October 31, 1916. The engineer's preliminary estimate was $27,333.00, the contractor's bid, $22,650.00. The value of work done during the year is $3,872. On February 5, 1918, the Canal Board accepted the work and approved the final account, which amounted to $17,041.90. The amount paid on extra work orders during the year is $824.00, total to date, the same.

An extra work order dated November 8, 1917, provides for transporting and placing stone as riprap. The final account, amounting to $824.00, was approved by the Canal Board December 19, 1917.

On July 1, 1917, the steel sheet-piling and concrete seal along the upstream face of the north span were in place and the steel sheet-piling had been driven along the face of the north abutment and the upstream face of the south span. Some piling had also been driven on the north side of the middle pier and along the face of the south abutment. The driving of steel piling at the south abutment was finished by July 20, and on August 31 the piles around the upper end of the middle pier had all been driven. This finished the work of driving steel sheet-piling. The placing of the concrete seal over the steel sheet-piling was finished by December 7, 1917, as was also the placing of riprap under the extra work order of November 8, 1917. The old cofferdam has been removed. Some of the steel piles that could not be pulled were burned off and six wooden piles were cut off. On December 21, 1917, the contract work was finished with the exception of removing two forms from the concrete seal and replacing a wicket chain that was damaged in driving the steel piling.

Contract No. 122-A

This contract is for constructing the substructure and superstructure, and completing the approaches of a highway bridge over the Mohawk river (Barge canal prism) at about center line Sta. 4246+42, near Little Falls. It was awarded to Chesley, Earl & Heimbach, Inc., being signed on March 8, 1917. Construction work began April 21, 1917. The engineer's preliminary estimate was $52,717.00, the contractor's bid, $67,053.10. The contract price as modified by alteration No. 1 is $67,377.00. Excess fourth-class riprap to the value of $315.00 has been authorized by the Canal Board. The value of work done during the year is $33,900, total done to date, $37,130.

W. C. Benedict, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board October 23, 1917, substitutes steel sheet-piling for wooden sheet-piling under the two piers of the new bridge and eliminates the removal of the old bridge. It increases the contract price by $323.90.

The approaches, except for some lining yet to be placed, were made from material excavated from the coffer-dams and borrow from river spoil-banks near by and hauled by teams.

The abutments and piers are completed according to the plans as modified by alteration No. 1, steel sheet-piling being substituted for the wooden sheet-piling under the pier foundations. The wooden sheet-piling could not be driven in the material encountered.

The piers were built inside coffer-dams of steel sheet-piling driven by a combination pile-driver and derrick placed on scows. The round piles were driven by a drop hammer in 45-foot leads, and the sheet-piles by a steam hammer. The concrete was placed in the footing courses by a bottom-dump bucket.

The north and south girder spans have been bolted into position and are ready to be riveted. The steel for the channel truss span is being scraped and wire-brushed and given another shop coat of red-lead paint, due to not being protected from the weather after receiving the first shop coat.

Contract No. 181

This contract is for repairing and water-proofing the existing concrete prism and placing new concrete lining in the canal at Little Falls. It was awarded to Law Brothers, being signed on December 28, 1917. The engineer's preliminary estimate was $46,624.00, the contractor's bid, $54,694.00. The value of work done during the year is $47,370.00, total done to date, the same.

E. F. Dossert, Junior Assistant Engineer, is in charge.

On December 26 the contractor began to assemble his plant and to draw material for concrete. This work continued until March 29, when the actual work of construction began. The clearing away of the ice and debris from the place where the lining was to be placed was done by raising and lowering the level of the water in the canal. The prism was then graded and concrete placed at the west end of the contract, Sta. 4821+25. The materials and mixer were placed on the old tow-path and the concrete was conveyed by chutes to the canal bottom.

At the east end, about Sta. 4304, the silt deposit on top of the existing concrete lining was excavated by wheelbarrow gangs and spoiled in the bed of the old Erie canal adjacent to the north bank. Test holes in the old concrete lining were drilled and the existing concrete lining removed in places where it had been undermined and the holes refilled with second-class concrete.

After the old lining was put in shape the whole area was waterproofed by a process which consists of three layers of hot bitumen and two layers of cotton fabric impregnated with the hot bitumen layed alternately. Over this was placed three inches of first-class concrete. The concrete was mixed on the top of the wall and conveyed by chute to dump cars on a narraw-gage track in the canal bottom; thence the cars were hauled by an auto truck to the dumping place. The work, except the coping above pool level, was discontinued May 12 and cannot be completed until December, when navigation closes.

Contract No. 30-A

This contract is for completing the construction of the improved Erie canal at its intersections with the old Erie canal, and incidental work, between Jacksonburg and Herkimer. It was awarded to E. Brown Baker, being signed on November 24, 1916. On February 21, 1917, it was assigned to the Mohawk Dredge & Dock Co., Inc., and this assignment was approved by the Superintendent of Public Works March 26, 1917. Construction work began November 24, 1916. The engineer's preliminary estimate was $122,013.00, the contractor's bid, $128,182.00. The contract price as modified by alteration No. 1 is $128,837.20. The value of work done during the year is $44,851. The work was accepted January 16, 1918, and the final account, amounting to $124,460.85, was approved by the Canal Board April 10, 1918.

C. G. Ranney, Assistant Engineer, was in charge.

Alteration No. 1, approved by the Canal Board October 16, 1917, provides for using 3/8-in. steel sheet-piling in place of 1/4-in. steel sheet-piling above the dry-span arches near the Herkimer guard-gate. It increases the contract price by $655.20.

On July 1, 1917, there remained to be done, to complete this contract, the following: Grading slope and placing bank protection on south prism slope east of the junction lock at Mohawk; grading slope, removing dry wall and placing bank protection between Stas. 4650 and 4655; placing riprap under-pinning east of Washington street bridge, Herkimer.

The dry wall at Fort Herkimer was removed by dipper-dredge and the slope made partly by dipper-dredge and partly by derrick-sloper boat. The stone excavated from the old dry wall was used in the bank protection as well as some additional stone from the quarry west of Jacksonburg.

The work was completed in December and the plant removed and contract cleaned.

Contract No. 146

This contract is for constructing a new movable dam to replace dam No. 14, at Herkimer. It was awarded to the Peckham Construction Co., Inc., being signed on April 18, 1918. The engineer's preliminary estimate was $81,726.20, the contractor's bid, $93,769.40. Excess sheeting and bracing to the value of $429.00 has been authorized by the Canal Board. The value of work done during the year is $180, total done to date, the same.

C. G. Ranney, Assistant Engineer, is in charge.

The excavation has consisted in removing existing riprap bank protection from above the present water-surface on the north and south sides of the river.

The contractor has been engaged in constructing a store-house and roadways across the New York State Railways' tracks for an approach from the highway and across the existing dry channel for an approach from the Barge canal.

Contract No. 153

The portion of this contract affecting this residency provided for delivering at Herkimer 38 red and 45 black oil-burning lanterns for buoy, stake and bridge lights. It was awarded to R. B. Wing & Son of Albany, N. Y., being signed on February 28, 1917. The engineer's preliminary estimate was $12.00 per lantern, the contractor's bid, $12.54 per lantern. On October 3, 1917, the Canal Board accepted the work and approved the final account, the amount being the same as the contractor's bid.

C. G. Ranney, Assistant Engineer, was in charge.

Eighty-three lanterns were delivered at Herkimer at a cost of $1,040.82. These lanterns had been delivered at the beginning of the fiscal year and were being tested prior to acceptance.

Contract No. 133

This contract is for constructing a junction lock at Mohawk. It was awarded to Morrison & Quinn, Inc., being signed on October 16, 1916. Construction work began in December, 1916. The engineer's preliminary estimate was $47,534.00, the contractor's bid, $48,638.80. The value of work done during year is $2,383. The work was accepted October 9, 1917, and the final account, amounting to $48,637.34, was approved by the Canal Board November 20, 1917. The amount paid on extra work orders during the year is $2,623.10, total to date, $3,192.98.

H. W. Jewell, Junior Assistant Engineer, was in charge.

An extra work order dated August 15, 1917, provides for placing certain operating machinery and furnishing miscellaneous parts.

An extra work order dated November 20, 1917, provides for constructing a drain at the junction lock. The final account, amounting to $2,623.10, was approved by the Canal Board April 24, 1918.

The greater part of this contract was completed and the lock in operation prior to July 1, 1917. The remaining work, consisting of some excavation and embankment and a small piece of concreting, was completed and the contract cleaned up by early fall.

Contract No. 29-A

This contract is for completing the construction of the canal within the limits of old contract No. 29. It extends from a point one-half mile east of Sterling creek to the Herkimer–Oneida county line. Length, 4.0 miles. It was awarded to the Eastover Construction Co., Inc., being signed on March 27, 1916. Construction work began early in April, 1916. The engineer's preliminary estimate was $162,005.00, the contractor's bid, $185,106.50. The contract price as modified by alterations Nos. 1 to 5, inclusive, is $318,659.70. Excess quantities to the value of $1,583.00 have been authorized by the Canal Board. The value of work done during the year is $139,140, total done to date, $298,520. The amount paid on extra work orders during the year is $4,944.60, total to date, the same.

An extra work order dated June 25, 1917, provides for repairing breaks in the south bank between Burch culvert and Harbor bridge. The final account, amounting to $4,944.60, was approved by the Canal Board December 19, 1917.

Sterling creek dam and entrance and Sterling creek spillway were completed prior to July 1, 1917.

Progress of work on structures is as follows:

Stream entrances. The excavation for the stream entrance at Sta. 5202+54 was made by teams and hand work. The riprap was brought to the site in scows and laid by hand.

At Burch creek entrance. A guy derrick made the excavation necessary and placed the riprap to connect with the adjacent drainage ditch. The concrete was mixed with a gasoline mixer and placed with a guy derrick.

At Burch culvert. At the inlet a guy derrick made the necessary excavation and placed the riprap. At the outlet similar work was done by the McMyler crane.

At Day culvert. The embankment on the north and south sides has been trimmed by hand and teams. This completes the work at this structure.

At Day spillway. The work provided for by alteration No. 4 at this structure was begun in May, 1917, and carried to completion during the season. The coffer-dam was built and sheet-piling cut-off driven by a derrick-boat. Then a guy derrick was set upon on the west side of the spillway and moved eastward as the work progressed. This derrick made the necessary excavation, drove the foundation piles and placed the concrete. The materials for concrete were brought to the site on scows and mixed by a steam-power rotary mixer. A small traveling derrick was used to place the riprap protections around the lower end of the spillway. It also made the excavation for and placed the riprap roadway across the lower end of the outlet channel.

Prism. The 20-inch hydraulic dredge has completed the excavation below the lock and there is now a 75-foot chanel 12 feet deep the entire length of the contract, with the exception of a small amount of refill, which has entered the prism at certain locations. A derrick-boat, a Bucyrus excavator and a McMyler crane have completed the excavation and the placing of wash wall on the banks throughout the length of the contract. Wash-wall stone was transported from Jacksonburg and Utica. Teams with scrapers have graded the banks on the south side between Harbor and West Schuyler bridges and between Budlong creek and the end of the contract, on the north side between Sta. 5270 and Sta. 5272. Roadways to embankment have been completed. A traveling pile-driver has driven sheet-piling in the south bank, provided for by alteration No. 2. Teams with scrapers, a derrick-boat and a McMyler crane have completed the embankment, with the exception of the north bank between Stas. 5216 and 5220 and some trimming on the south bank between Burch culvert and Harbor bridge. Some of the material used was borrowed and transported to the work in scows.

Drainage ditches. This work has been carried on at the various locations, as follows: Between Burch creek stream entrance and Burch culvert inlet, north side, by guy derricks; between Stas. 5189 + 75 and 5196, north side, by McMyler crane; between Stas. 5265 and 5290 + 50, north side, by traveling excavator and teams with scrapers; between Stas. 5337 + 38 and 5340 + 64.6, north side, by hand work; between Sta. 5202 + 48 and Burch culvert outlet, south side, by McMyler crane; between Sta. 5283 + 84 and Day culvert outlet, south side, by teams with scrapers and hand work.

Bridges. At Harbor bridge the structural steel in the end dams has been placed, existing flooring removed and new flooring with wheel guards replaced. The excavation for concrete back walls has been made and the second-class concrete and second-class reinforced concrete in the south back wall placed. The concrete was mixed by hand.

At West Schuyler bridge. The cinder fill on the south side has been completed and cinders delivered for north side, but not brought to final lines. The cinders were brought to Harbor station by railroad and transported to the bridge by teams. A derrick-boat has placed the wash wall on the cinder fill, south side, and the riprap in front of the south abutment. Highway traffic has been maintained at the bridges.

At Lock No. 19 and guide-walls. Excavation has been made by hand for snubbing-posts, concrete bases have been placed and cast-iron posts set. The lining on the north side of the lock has been completed. Wooden cover plates for quoin-posts and gate anchorage recesses have been made. Defective concrete, as provided by alteration No. 2, has been removed and replaced at lock and guide-walls. Metal reinforcement was used in the replacement on vertical faces of walls. Defective concrete was removed by compressed air drills. In the replacement the concrete was mixed by hand and by gasoline rotary mixer.

Some progress has been made on cleaning up the site of the contract.

Appropriation surveys have been made and maps prepared. Final account sheets to the number of 278 have been made, checked and sent to the division office, and 30 sheets are partially completed.

Terminal Contract No. 37 — *Canajoharie*

This contract is for the construction of a harbor and dockwall near the outlet of Canajoharie creek at Canajoharie. It was awarded to Holler & Shepard, being signed on August 26, 1915. Construction work began June 16, 1916. The engineer's preliminary estimate was $33,832.00, the contractor's bid, $32,272.00. The value of work done during the year is $13,120, total done to date, $26,500. The amount paid on extra work orders during the year is $67.71, total to date, the same.

H. C. Kline, Assistant Engineer, was in charge until June 9, 1918, since which time T. J. Loonie, Assistant Engineer, has been in charge.

An extra work order dated November 8, 1917, provides for resetting forms for a portion of the wall. The final account, amounting to $67.71, was approved by the Canal Board December 4, 1917.

At the beginning of the fiscal year the work of trenching for the concrete piles under the 300-foot wall was continued. The piles were driven with a steam-hammer and jet and the tops were then cut off to grade. Concrete covering was placed around the anchors and tie rods and the hydraulic dredge continued and completed the harbor excavation. In November, 1917, the anchors, tie rods and wall coping were completed and the snubbing-posts set. At the end of the fiscal year the work remaining to be done on this contract is the placing of the concrete paving, fender piles and third-class riprap and the grading of the spoil-area and roadway.

Terminal Contract No. 40 — *St. Johnsville*

This contract is for the construction of a harbor and dockwall at St. Johnsville. It was awarded to J. E. Bishop, being signed on September 20, 1915. It was assigned to Scott Brothers and this assignment was approved by the Superintendent of Public Works August 4, 1916. The engineer's preliminary estimate was $27,963.00, the contractor's bid, $25,515.81. The contract price as modified by alteration No. 1 is $27,762.37. The value of work done during the year is $2,563. The work was accepted

September 5, 1917, and the final account, amounting to $25,542.91, was approved by the Canal Board October 3, 1917.

Charles R. Waters, Assistant Engineer, was in charge.

Alteration No. 1, approved by the Canal Board February 23, 1916, changes limits of excavation, etc. It increases the contract price by $2,246.56.

The contract work was finished in July, 1917.

Terminal Contract No. 101

This contract is for furnishing and installing steel stiff-leg derricks on terminal sites at Albany, Whitehall, Little Falls, Rome, Lockport and Tonawanda. The following report relates to the work at Little Falls. The contract was awarded to E. Brown Baker, being signed on December 18, 1916. On February 21, 1917, it was assigned to the Mohawk Dredge & Dock Co., Inc., and this assignment was approved by the Superintendent of Public Works March 26, 1917. The engineer's preliminary estimate for the derrick at Little Falls was $3,420.70, the contractor's bid, $5,043.20. Excess metal (Little Falls) to the value of $1,078.00 has been authorized by the Canal Board. The value of work done at Little Falls during the year is $5,450, total done to date, the same.

G. A. Ensign, Assistant Engineer, is in charge.

An extra work order dated December 11, 1917, provides for furnishing and installing motors and the necessary connecting gears at Rome and Little Falls.

An extra work order dated April 26, 1918, provides for furnishing materials for a power line from the German street bridge to the derrick.

The excavation for the concrete footings for the derrick at Little Falls was made late in the year of 1917. At that time a small amount of concrete was placed. During the month of April, 1918, these concrete footings were completed, the backfill placed and the steel derrick erected. A small amount of work still remains to be done to make the Little Falls derrick ready for acceptance.

Terminal Contract No. 27-P

This contract is for paving the terminal site at Frankfort. It was awarded to Patrick W. Mulderry, being signed on April 12,

1918. The engineer's preliminary estimate was $4,100.00, the contractor's bid, $4,446.00.

Construction work has not yet begun.

Terminal Contract No. 208

This contract is for constructing terminal warehouses at Fort Plain and Little Falls. It was awarded to the Kennedy & Scullen Construction Co., being signed on May 7, 1917. Construction work began at Fort Plain on May 17, 1917, and at Little Falls on May 23, 1917. The engineer's preliminary estimate was $9,140.00, or $4,570.00 for each warehouse, the contractor's bid, $9,278.76, or $4,639.38 for each warehouse. Excess quantities to the value of $93.58 ($62.95 for Fort Plain warehouse, $30.63 for Little Falls warehouse) have been authorized by the Canal Board. The value of work done during the year is $478.00 ($168.00 for Fort Plain, $310.00 for Little Falls). The work was accepted August 1, 1917, and the final account, amounting to $9,289.18 ($4,688.17 for Fort Plain and $4,601.01 for Little Falls), was approved by the Canal Board October 23, 1917. The amount paid on extra work orders during the year is $109.18, or $54.59 for each warehouse.

W. C. Benedict, Assistant Engineer, was in charge of this work.

An extra work order dated July 16, 1917, provides for placing wire screens over the windows and doors of these warehouses. Final account, amounting to $54.59 for each warehouse, was approved by the Canal Board December 4, 1917.

These warehouses had been nearly completed at the beginning of the fiscal year. The remaining painting and the electrical work was finished in July and the contract completed in August. Prior to September 30 the extra work order for the placing of metal screens on the windows and doors of the warehouses was completed.

Terminal Contract No. 204

This contract is for constructing temporary warehouses at Schenectady, Amsterdam, Fonda, Ilion and Frankfort. The following report relates to the work at Ilion and Frankfort. The contract was awarded to Byron, Forman and Riggs, Inc., being signed on March 12, 1917. On April 23, 1917, it was assigned to Kennedy and Scullen and this assignment was approved by the Superintendent of Public Works May 2, 1917. The engineer's preliminary estimate was $815.00 each for Ilion and Frankfort, the contractor's bid, $738.90 for Ilion and $733.90 for Frankfort. The contract price as modified by alteration No. 1 is $2,477.90 each for these two warehouses. The work was accepted and the final account, amounting to $19,023.35 for the whole contract, was approved by the Canal Board October 23, 1917. The final account for these two warehouses was $2,481.55 each. The amount paid on extra work orders is $86.33 each at Ilion and Frankfort, all during the year.

An extra work order dated July 2, 1917, provides for placing galvanized wire screens over the windows and doors of the warehouses. The final account, amounting to $272.95, was approved by the Canal Board October 23, 1917. The cost at each warehouse was $54.59.

An extra work order dated July 9, 1917, provides for placing door-guards on the warehouses at Schenectady, Fonda, Ilion and Frankfort. The final account, amounting to $189.52, was approved by the Canal Board October 23, 1917. The cost at Ilion and Frankfort was $31.74 each.

This contract was practically finished a year ago.

In concluding this report I desire to renew certain recommendations I made in my report of a year ago and to add one new one.

The first relates to the Erie canal tow-path between South St. Johnsville and Mindenville, which is used to a considerable extent as a highway. By constructing a culvert in the old Erie canal nearly opposite the westerly end of the upper south approach wall to lock No. 16 and by building a road from the present highway to the old tow-path, there would be provided a good way with easy grade to reach the power-house at lock No. 16 from both St. Johnsville and Little Falls. The cost of this improvement at present prices should be less than $2,000.

The high water of last spring showed more conclusively than any former experience that conditions at the entrance of Castle creek into the Barge canal prism should be changed. In my former report I described the situation and suggested a remedy.

I would add that in March of the present year, although the water of Castle creek 600 feet above the old aqueduct reached an elevation of nearly 337.0, or within four inches of the top of the dike, very little went through the opening in the old tow-path. During the same month and a part of February, from Indian Castle guard-gate to a point several hundred feet westward, the prism was jammed with ice for the full depth and width and the result is that there is from one to two feet of sediment for the full width of the prism from the guard-gate westerly to the beginning of the land-line. Last spring, also, the water in the creek between the West Shore railroad bridge and the Barge canal prism was within two or three inches of the top of the dike on the east side of the creek. The cost of the spillway which I proposed as a solution of this problem would be, by a very liberal estimate at present prices, from $20,000 to $25,000.

A cable is needed above the Rocky Rift dam, to make it possible for an operator to remove both the flash-boards and driftwood; also a small hoisting engine for hauling to shore large logs, trees, etc. I would renew by suggestion of a year ago that these be provided.

A suspension foot-bridge across Castle creek at the old aqueduct, to afford access to Rocky Rift dam, is more necessary now than heretofore, since a gage has been established at the dam.

I renew, also, my recommendation for the placing of booms at certain places for the purpose of catching and holding driftwood and debris, so that it will not interfere with navigation or with the operation of locks and dams. These should be located above the Frankfort retaining dam, above the Herkimer dam and below both the West Canada creek and the East Canada creek entrances.

Last year I suggested that about ten stake lights would be needed along a stretch of nearly two miles of channel in the vicinity of Mindenville bridge and westerly therefrom, to keep boats of 10 or 11 feet draft off from an existing berme. However, it would be better to remove the berme.

The 254 acres of good but isolated land between old lock No. 41 and new lock No. 18, together with 50 acres of tillable land belonging to the State, a total of more than 300 acres worth at least $150 per acre, is still inaccessible to teams. I suggested building a bridge across the canal to this land. It would cost at least $18,000.

It would seem advisable that whatever action is necessary should be taken to make it legal for the State to lease the hundreds of acres of appropriated lands for purposes of cultivation. By leasing for terms of five years or more a tenant could afford to fertilize and make productive whatever land is not already tillable.

In order to maintain traffic during the construction of contract No. 18-A it was found necessary to construct a temporary lock. This lock is located about 1¼ miles below the Indian Castle guard-gate. Its lift was only about 2½ feet. It was used but one season. Then traffic was opened through the Barge canal prism all the way between lock No. 16 and lock No. 17. The maximum navigable elevation of water in the Barge canal opposite the location of the temporary lock is theoretically about 327.0, but in case of a sudden rise in the river the water reaches elevation 328.0 or 329.0 before the guard-gate is lowered. When this happens the water from the prism of the canal flows through and over the lock wall, which is at elevation 326.0, and floods the old tow-path, which is barely one foot higher, and over the berme bank above the lock, which in places is below elevation 325.0. To prevent this damage a dike should be built from the south Barge canal embankment across the old canal tow-path to the West Shore railroad.

I am very grateful to you and my other superiors in this Department for your counsel and consideration and I desire to express the appreciation of the members of the corps in this residency for the good treatment which has been accorded them.

CHAMPLAIN CANAL, RESIDENCY NO. 1

Assistant Engineer R. D. Hayes reports:

This residency extends from the connection with contract No. 1, north of the guard-lock at Northumberland, to the junction with the Erie canal at Waterford. Length, about 27 miles.

Appropriation surveys have been made and release maps prepared, the State, in some instances, reserving flowage rights. A rain gage has been set near lock No. 5. The office work has consisted in checking and typing monthly estimates, making miscellaneous computations and drawings, getting out weekly and monthly reports, pay-rolls, force accounts, etc., for residencies Nos. 1, 2 and 3.

Contracts Nos 70-A, 72-B and 169 have been completed, the work on contract No. 131-A is finished and contract No. 73-A is 97.6 per cent completed. The final account for terminal contract No. 13 has been prepared, but the settlement is in litigation. Detailed reports on these contracts follow.

Contract No. 70-A

This contract is for completing the excavation of a channel in the Hudson river and performing work incidental thereto from Waterford to lock No. 1. It was awarded to the Central Dredging Co., being signed on October 22, 1912. Construction work began in April, 1913. The engineer's preliminary estimate was $790,488.00, the contractor's bid, $759,158.88. The value of work done during the year is $38,102. The work was accepted December 4, 1917, and the final account, amounting to $789,591.62 was approved by the Canal Board January 30, 1918. The amount paid on extra work orders during the year is $7,750.00, total to date, $9,250.00.

John McBride, Assistant Engineer, was in charge.

An extra work order dated July 11, 1917, provides for placing protection along the river bank at the Weber property. The final account, amounting to $3,400.00, was approved by the Canal Board October 3, 1917.

An extra work order dated August 20, 1917, provides for placing bank protection along the east bank of the Hudson river below lock No. 1. The final account, amounting to $4,350.00, was approved by the Canal Board December 19, 1917.

During the year the prism has been completed and swept, isolated snubbing-posts below lock No. 1 were placed and the bank was protected against wash. The work under the two extra work orders was finished.

Contract No. 169

This contract is for constructing temporary stone-filled timber guide-cribs below locks Nos. 3 and 6. The following report is for the work below lock No. 3. The contract was awarded to Holler & Shepard, being signed on June 28, 1917. Construction work began in July, 1917. The engineer's preliminary estimate for the whole contract was $3,508.00, the contractor's bid, $3,066.00. Excess iron and steel fastenings to the value of $144.00 have been authorized by the Canal Board. The value of work done on this residency is $1,713.20. The work was accepted October 9, 1917, and the final account, amounting to $2,882.53 ($1,713.20 for this residency), was approved by the Canal Board November 20, 1917.

James B. Foote, Assistant Engineer, was in charge.

The contractor finished building the cribs below lock No. 3 in August, 1917.

Contract No. 72-B

This contract is for widening the canal prism in the Hudson river from the mouth of the Hoosic river to the south end of Green island. It was awarded to James Stewart & Co., Inc., being signed on July 7, 1916. Construction work began July 15, 1916. The engineer's preliminary estimate was $207,700.00, the contractor's bid, $108,540.00. The value of work done during the year is $1,417. The work was accepted August 15, 1917, and the final account, amounting to $92,516.58, was approved by the Canal Board September 5, 1917.

W. L. Caler, Assistant Engineer, was in charge.

The prism excavation was practically finished last year. The sweeping of the prism was completed in July, 1917.

Contract No. 73-A

This contract is for completing the construction of the canal from Northumberland to Stillwater. Length, about 15 miles. It was awarded to the Great Lakes Dredge & Dock Co., being signed on January 15, 1916. The engineer's preliminary estimate was $432,045.00, the contractor's bid, $321,679.92. The contract price as modified by alterations Nos. 1, 2, 3 and 4 is $506,169.67. Excess quantities to the value of $2,270.00 have been authorized by the Canal Board. The value of work done during the year is $129,290, total done to date, $447,430. The amount paid on extra work orders during the year is $2,530.77, total to date, $2,874.92.

Mott Palmer, Junior Assistant Engineer, is in charge.

Alteration No. 4, approved by the Canal Board August 15, 1917, provides for removing a point of rock on the east side of the channel just below the Northumberland bridge and for excavating refilled bars at other points. It increases the contract price by $47,904.00.

An extra work order dated December 4, 1916, provides for relocating the capstan at the lower end of lock No. 5. The final account, amounting to $530.77, was approved by the Canal Board October 23, 1917.

An extra work order dated October 5, 1917, provides for removing two sunken canal boats below lock No. 5. The final account, amounting to $2,000.00, was approved by the Canal Board December 4, 1917.

Above Lock No. 5. The prism from Sta. –21 to Sta. –11 has been swept. The prism has been finished and swept east of Sta. –20, from Sta. –11 to Sta. 5, and from Sta. 18 to Sta. 43. Wash wall has been laid on the west slope from Sta. 5 to Sta. 1 + 80. Fourth-class riprap has been laid on the west slope from Sta. 1 + 80 to about Sta. –(1 + 60). All work has been completed above lock No. 5, except the placing of timber snubbing-posts back of the timber-crib dock above guard-lock No. 10, as called for under extra work order, dated September 5, 1916. Excavation was done with dipper-dredges and a hydraulic dredge.

Below Lock No. 5. The prism excavation has been completed from Sta. 41 to Sta. 61 and the settling basin has been excavated. The prism has not been swept. All excavation was done with dipper-dredges.

At Coveville. The prism excavation has been completed from Sta. 283 to Sta. 286 and from Sta. 325 to Sta. 330.

At Wright's. The prism excavation has been completed from Sta. 553 to Sta. 564.

At Bemis Heights. The prism excavation has been completed from Sta. 627 to Sta. 642, but has not been swept.

At Stillwater. The prism excavation from Sta. 759 to Sta. 781 has been completed, but has not been swept. The isolated cast-iron snubbing-posts have not been set.

Contract No. 131-A

This contract is for completing the reconstruction of the highway bridge crossing the main channel of the Hudson river at Schuylerville. It was awarded to Michael Fitzgerald, being signed on March 5, 1917. Construction work began in April, 1917. The engineer's preliminary estimate was $30,753.00, the contractor's bid, $39,634.50. Excess foundation piles to the value of $140.00 have been authorized by the Canal Board. The value of work done during the year is $36,460, total done to date, $36,880. The amount paid on extra work orders during the year is $640.04, total to date, the same.

C. A. Curtis, Assistant Engineer, is in charge.

An extra work order dated October 16, 1917, provides for replacing the floor on the channel span. The final account, amounting to $487.40, was approved by the Canal Board June 19, 1918.

An extra work order dated March 2, 1918, provides for a temporary floor over the bridge. The final account, amounting to $150.00, was approved by the Canal Board March 20, 1918.

Work on the east abutment was commenced in July, 1917, and the first steel was placed in November, 1917. The bridge was opened for traffic on February 22, 1918. Contract work was finished June 30, 1918.

Terminal Contract No. 13 — *Schuylerville*

This contract is for constructing a guard-lock and bridge at Schuylerville. It was awarded to Lou B. Cleveland, being signed on December 29, 1914. It was assigned to the Kendar Engineering and Construction Co., Inc., and this assignment was approved by the Superintendent of Public Works on December 16, 1915. On February 23, 1916, the Canal Board suspended the contract and since then the work has been under the supervision of the Department of Public Works, J. W. Holler, of the firm of Holler

& Shepard, taking charge. The engineer's preliminary estimate was $61,664.60, the contractor's bid, $42,742.80.

The construction work on this contract was practically finished prior to July 1, 1917. The final estimate has been made up and sent to the division office, but the settlement is in litigation.

CHAMPLAIN CANAL, RESIDENCY NO. 2

Assistant Engineer R. D. Hayes reports:

This residency extends from the Northumberland bridge, across the Hudson river, northerly to the highway bridge at Dunham's Basin, Washington county, and includes the Glens Falls feeder and dam.

The work on this residency has been directed from the Mechanicville office. During the past year active work has progressed on contracts Nos. 1-A, 128 and 169. Of these, the last two contracts have been finished.

Under a special agreement between Holler & Shepard and the Superintendent of Public Works, dated April 14, 1917, for the removal of bars between Fort Miller and Whitehall, 30,645 cu. yds. of material were removed between Fort Miller and the northerly limit of this residency.

Under a special agreement between Holler & Shepard and the Superintendent of Public Works, dated September 12, 1917, a new road is being constructed between the Delaware & Hudson railroad bridge and the Idle Hour club premises at Fort Edward.

A number of claims have been investigated and reports forwarded to the office of the Division Engineer.

All other contract work on this residency was completed prior to July 1, 1917.

Contract No. 128

This contract is for the construction of the substructure, superstructure and approaches of a highway bridge over the Hudson river at Northumberland. It was awarded to Holler & Shepard, being signed on May 27, 1916. Construction work began in August, 1916. The engineer's preliminary estimate was $77,751.50, the contractor's bid, $76,486.70. The value of work done during the year is $15,381. On June 26, 1918, the Canal Board accepted the work and approved the final account, which amounted to $74,591.29.

C. A. Curtis, Assistant Engineer, was in charge.

An extra work order dated March 7, 1918, provides for refilling old highway where material had been removed.

The erection of the substructure and general excavation work was done by the contractors. The steelwork was sublet to the W. S. Rae Co., which furnished and erected the superstructure during the season of 1917.

Contract No. 169

This contract is for constructing temporary stone-filled, timber guide-cribs below locks Nos. 3 and 6. It was awarded to Holler & Shepard, being signed on June 28, 1917. Construction work began in July, 1917. The engineer's preliminary estimate was $3,508.00, the contractor's bid, $3,066.00. Excess iron and steel fastenings to the value of $144.00 have been authorized by the Canal Board. The value of work done on this residency is $1,169.33. The work was accepted October 9, 1917, and the final account, amounting to $2,882.53 ($1,169.33 for this residency), was approved by the Canal Board November 20, 1917.

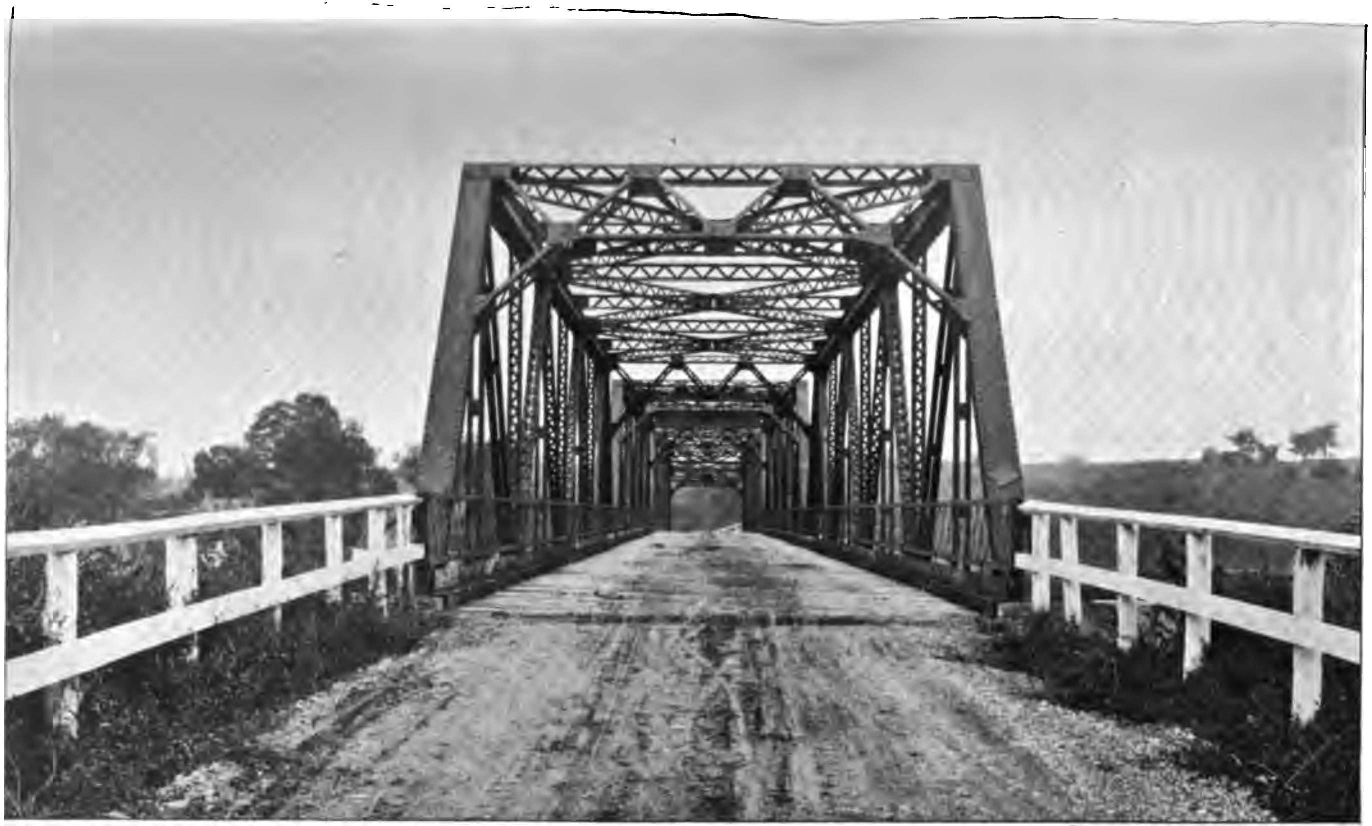
James B. Foote, Assistant Engineer, was in charge.

The contractor placed and finished building the cribs below lock No. 6 at Fort Miller during July, 1917.

Contract No. 1-A

This contract is for completing the construction of the canal from Crocker's Reef to Fort Edward. It was awarded to Holler & Shepard, being signed on August 31, 1914. The engineer's preliminary estimate was $90,811.00, the contractor's bid, $120,459.40. The contract price as modified by alterations Nos. 1, 2 and 3 is $141,540.20. Excess excavation to the value of $67,200 has been authorized by the Canal Board. The value of work done during the year is $30,990, total done to date, $193,530. The amount paid on extra work orders during the year is $455.00, total to date, the same.

James B. Foote, Assistant Engineer, is in charge.



Bridge over the Hudson River at Northumberland

Two spans cross the river channel and one longer span crosses the canal channel. This bridge replaces the old structure, from which boats were towed across the river in the transfer of the canal from one bank to the other.

Alteration No. 2, approved by the Canal Board October 31, 1917, provides for changing the location of the center line of the canal between Sta. 295 and Sta. 334, just north of Crocker's Reef. It decreases the contract price by $335.20.

Alteration No. 3, approved by the Canal Board December 19, 1917, provides for placing bank protection along the west bank of the Hudson river at the property of Alfred Taylor and along the west shore and at the southerly extremity of Bradley's island, near lock No. 7.

Prism excavation has progressed, a dipper-dredge and derrick-boat being used. A drill-boat has been used for drilling in the prism. The resurfacing of concrete at Crocker's Reef has been completed. Under alteration No. 3, 1,503 cu. yds. of rock-spoil protection have been placed. The plant was laid up for the winter on November 28, 1917. The work of furnishing and placing flash-boards on the Crocker's Reef dam under the extra work order dated March 29, 1917, is 70 per cent completed.

CHAMPLAIN CANAL, RESIDENCY No. 3

Assistant Engineer R. D. Hayes reports:

This residency extends from the highway bridge at Dunham's Basin, Washington county, northerly to Lake Champlain at Whitehall, a distance of 19.8 miles.

A number of claims on contracts Nos. 15 and 25 have been investigated and reports sent to the Division Engineer's office. Rain gages have been set near locks Nos. 9 and 12.

Under a special agreement between Holler & Shepard and the Superintendent of Public Works, dated April 14, 1917, for the removal of bars between Fort Miller and Whitehall, 9,780 cu. yds. of material were removed between lock No. 9 and the bridge at Smith's Basin.

Under an agreement between J. W. Holler and the Superintendent of Public Works, dated May 29, 1918, for dredging the channel of the Barge canal between lock No. 8 and the Comstock bridge, 2,420 cu. yds. of material were excavated from the prism near Smith's Basin, and 6,175 cu. yds. were removed about one and one-half miles south of Whitehall.

All work on this residency has been directed from the Mechanicville office.

Terminal Contract No. 201

This contract is for constructing terminal warehouses at Albany and Whitehall. The following report relates to work at Whitehall. The contract was awarded to J. A. Laporte, being signed on January 2, 1917. The engineer's preliminary estimate for the warehouse at Whitehall was $22,800.00, the contractor's bid, $25,068.35. The value of work done at Whitehall during the year is $6,550, done to date, $6,950.

W. L. Caler, Assistant Engineer, is in charge.

The warehouse has been concreted to elevation 118.3 and about 60 sq. yds. of concrete flooring have been placed.

On November 19, 1917, the erection of steel for the building was begun. Work was suspended from December 12 to December 27, 1917, on account of cold weather. The steelwork has been painted one field coat of gray paint. Twelve-inch vitrified pipe has been laid on the east and west sides of the building. The fire risers in the storage part of the building are installed.

Terminal Contract No. 101

This contract is for furnishing and installing steel stiff-leg derricks on terminal sites at Albany, Whitehall, Little Falls, Rome, Lockport and Tonawanda. The following report relates to the work at Whitehall. The contract was awarded to E. Brown Baker, being signed on December 18, 1916. On February 21, 1917, it was assigned to the Mohawk Dredge & Dock Co., Inc., and this assignment was approved by the Superintendent of Public Works March 26, 1917. The engineer's preliminary estimate for the derrick at Whitehall was $3,745.70, the contractor's bid, $5,500.20. Excess metal (Whitehall) to the value of $1,092.00 has been authorized by the Canal Board. The value of work done at Whitehall during the year is $6,170, done to date, the same.

W. L. Caler, Assistant Engineer, is in charge.

The location of this derrick was changed to a point 135 feet north of the warehouse.

Steel for this derrick arrived on May 8, 1918, the concrete foundation was finished on June 10, and on June 15 and 16 the derrick was erected. The steelwork was finished on June 22.

Terminal Contract No. 26 — *Rouses Point*

This contract is for constructing a pier and basin at Rouses Point. It was awarded to John E. Byron & Co., being signed on October 30, 1916. The engineer's preliminary estimate was $51,200.00, the contractor's bid, $55,678.50. The value of work done during the year is $14,720, total done to date, $18,730.

H. L. Clarke, Assistant Engineer, is in charge.

Excavation for the cribs was done with a derrick-boat. Eight cribs were launched and six completed and sunk into place. Operations were suspended for the winter on December 21, 1917, and no contract work has been done since that time.

NEW YORK RESIDENCY

Senior Assistant Engineer Edward Anderberg reports:

The New York residency has supervised the construction work at five Barge canal terminals in this city and progressed the plans for additional contracts in connection with these terminals and the three other unimproved terminal sites in the borough of Queens, as follows: Plans for contracts Nos. 38, 56, 207, 207-H and 207-P have been finished and the contracts let; plans, specifications and estimate for a freight-shed on the new pier at Greenpoint are 60 per cent completed; plans, specifications and estimate for repairs to the crib bulkhead, grading upland and constructing a freight-shed, at Long Island City are completed; and plans and estimate for dredging a terminal basin and constructing a bulkhead wall at Flushing are 60 per cent completed.

Plans were prepared and a bulkhead was constructed for retaining a proposed highway adjacent to Fort Tilden, Rockaway Point, L. I., under chapter 130, Laws of 1917. In connection with this work, plans were prepared for the construction of a concrete pavement on the proposed highway.

A field survey, plans and estimates were made to determine the cost of a right of way and bridges on two alternative routes through the Rockaway peninsula for the proposed Jamaica bay–Peconic bay canal, as authorized by chapter 317, Laws of 1917.

Plans were prepared and construction work supervised in connection with the repairs to the landing pier at Hoffman's island, State Quarantine Station.

A survey and estimate was made for repairing two sea-walls at Orient Point, L. I.

Several surveys have been made for the Attorney-General in connection with the foreclosure of U. S. Deposit Fund mortgages.

Surveys have also been made in connection with twenty-one applications for grants of lands under water in various parts of the city.

Reports on the various contracts follow.

Terminal Contract No. 55 — *Gowanus Bay*

This contract is for constructing a pier, 150 ft. by 1,220 ft., dolphins, etc., at Gowanus bay, borough of Brooklyn. It was awarded to the Riverside Contracting Co., being signed on September 4, 1917. Construction work began October 5, 1917. The engineer's preliminary estimate was $513,000.00, the contractor's bid, $509,800.75. The contract price as modified by alteration No. 1 is $508,400.75. The value of work done to date is $157,330.

L. T. Howard, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board January 9, 1918, provides for the substitution of certain reused piles for new piles. It decreases the contract price by $1,400.00.

The principal work done to date on this contract has been the driving of foundation piles, which have all been driven, except for bracing and fender piles, out to row 90, which is outshore about 900 feet, or about 300 feet inshore from the outer end of the pier. The longitudinal timber clamps, deck clamps and side caps have been placed to about row 75. Piles have been driven for dolphins along Columbia street and fender piles have been driven across the east pier seat.

The contractor's plant consists of a floating pile-driver, derrick lighter, compressor boat, tanks for timber treatment, etc.

The contract is 30.9 per cent completed.

Terminal Contract No. 56

This contract is for repairing Pier 5, East river, borough of Manhattan. It was awarded to I. J. Stander & Co., Inc., being signed on June 28, 1918. The engineer's preliminary estimate was $20,400.00, the contractor's bid, $27,159.60.

Construction work has not begun.

Terminal Contract No. 103-A

This contract is for furnishing, installing and testing two package-freight conveyors for Barge canal terminals. One of these is to be installed at some terminal in New York city. It was awarded to the Brown Portable Conveying Machinery Co., being signed on October 3, 1917. The engineer's preliminary estimate was $3,900.00 each, the contractor's bid, $4,100.00 each.

This conveyor has not been delivered. No payments have been made.

Terminal Contract No. 52—*Pier* 6, *East River*

This contract is for widening and rebuilding Pier 6, East river. It was awarded to Kaufman & Garcey, being signed on July 27, 1916. Construction work began October 13, 1916. The engineer's preliminary estimate was $89,974.00, the contractor's bid, $91,317.75. The contract price as modified by alterations Nos. 1, 2, 3 and 4 is $102,553.75. The value of work done during the year is $43,770, total done to date, $97,430. The amount paid on extra work orders during the year is $2,391.37, total to date, $2,726.04.

Ely Gamse, Assistant Engineer, is in charge.

Alteration No. 4, approved by the Canal Board December 4, 1917, eliminates pavement from the contract and changes the location of certain ducts for electric wires. It decreases the contract price by $6,804.00.

An extra work order dated March 27, 1917, provides for removing certain rangers in the floor system of the old pier, the removal of which was not provided for in the original contract.

The final account, amounting to $1,890.77, was approved by the Canal Board January 30, 1918.

An extra work order dated August 18, 1917, provides for the rental of street space adjacent to Pier 6, from May 1, 1917, to August 1, 1917. The final account, amounting to $173.50, was approved by the Canal Board September 5, 1917.

An extra work order dated October 23, 1917, provides for the rental of street space adjacent to Pier 6, from August 1, 1917, to November 1, 1917. The final account, amounting to $173.50, was approved by the Canal Board November 20, 1917.

An extra work order dated December 7, 1917, provides for replacing stone-block pavement back of the bulkhead wall.

An extra work order dated May 29, 1918, provides for the rental of street space adjacent to Pier 6, from November 1, 1917, to May 1, 1918. The final account, amounting to $153.60, was approved by the Canal Board June 12, 1918.

The work during the past year involved building up the timber bents with new lumber, placing a new concrete deck, a crane rail, concrete footings for freight-shed and a new fender system. The work of rebuilding this pier has practically been completed. The remaining work comprises the placing of some bolts in the timber connections at low-water elevation.

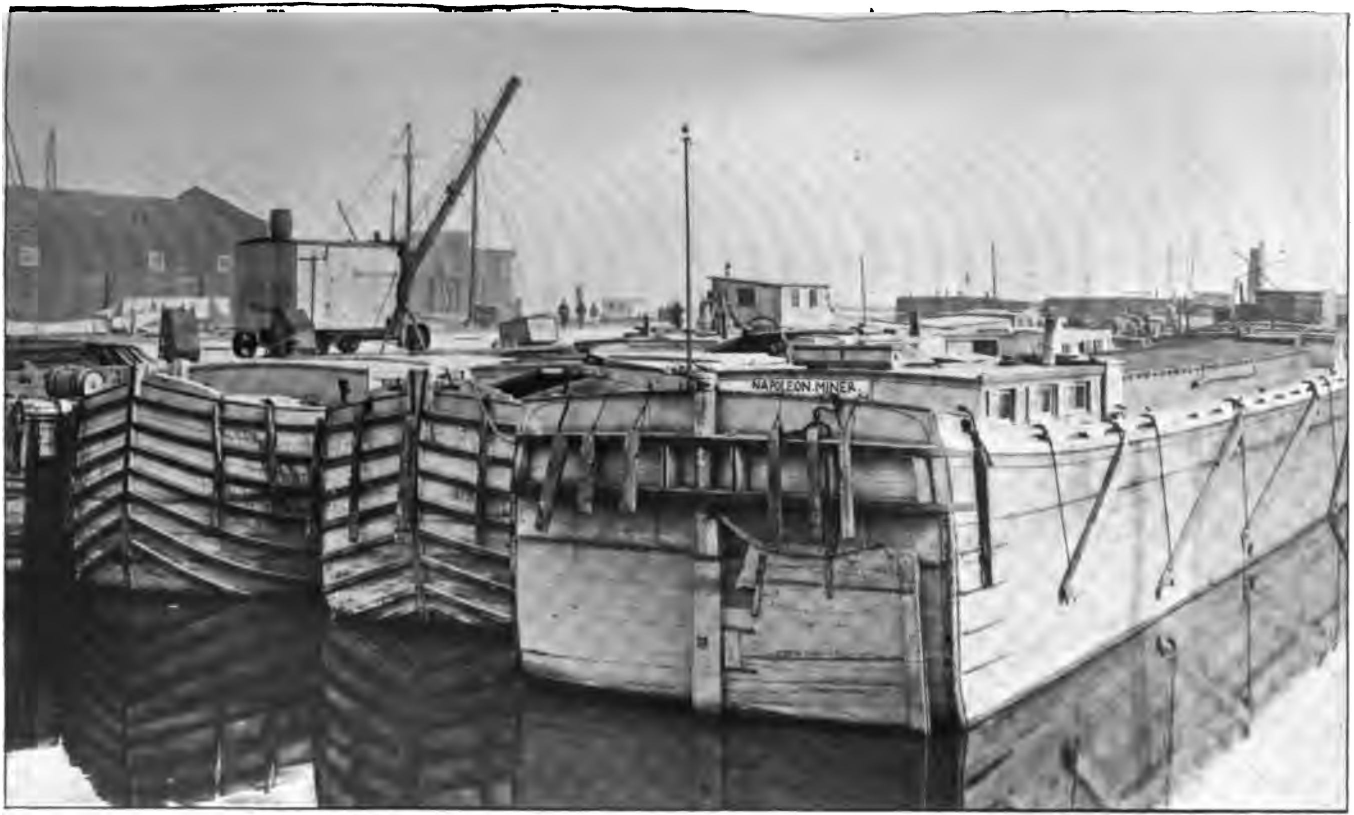
The contractor's plant, which consisted of a pile-driver, locomotive crane, power saw, compressor plant, concrete mixer and tanks for treating lumber with wood preservative, has been removed.

The contract is 95.0 per cent completed.

Terminal Contract No. 207

This contract is for constructing a freight-shed and head-house on Pier 6, East river. It was awarded to I. J. Stander & Co., Inc., being signed on January 11, 1918. The engineer's preliminary estimate was $133,500.00, the contractor's bid, $128,250.01.

The subcontractor for structural steel work has prepared shop drawings preparatory to fabricating steel. No field work has been done.



BARGE CANAL TERMINAL AT PIER 6, E. R., NEW YORK

After the State acquired this property it was necessary to enlarge and partially rebuilt Pier 6. Contracts for a freight-house are now in force.

Terminal Contract No. 207-H

This contract is for installing a heating system in the freight-shed on Pier 6, East river. It was awarded to Miller & Brady, Inc., being signed on March 22, 1918. The engineer's preliminary estimate was $3,250.00, the contractor's bid, $2,352.00.

Construction work has not begun.

Terminal Contract No. 207-P

This contract is for installing a plumbing and water-supply system in the freight-shed on Pier 6, East river. It was awarded to Jarcho Bros., Inc., being signed on April 16, 1918. The engineer's preliminary estimate was $6,000.00, the contractor's bid, $6,650.00.

Construction work has not yet begun.

Terminal Contract No. 105

This contract is for installing electric equipment for light, power and battery-charging, and auto-truck scales for Pier 6, East river. It was awarded to the Lord Electric Co., being signed on June 28, 1918. The engineer's preliminary estimate was $17,742.40, the contractor's bid, $16,000.50.

Construction work has not begun.

Terminal Contract No. 106

This contract is for furnishing fourteen two-ton steam tractor cranes for Barge canal terminals. Two of these are for Pier 6 and one for Long Island City. The contract was awarded to the John F. Byers Machine Co., being signed on February 14, 1918. The engineer's preliminary estimate was $5,250.00 per crane, the contractor's bid, $5,265.00 per crane. The contract price as modified by alteration No. 1 is $5,515.00 per crane. The value of work done at Pier 6 to date is $9,710.

Alteration No. 1, approved by the Canal Board March 27, 1918, provides for housing the fourteen cranes under this contract. It increases the contract price by $250.00 per crane.

One crane for Pier 6, East river, was delivered on May 3 and the second on May 15. These cranes were satisfactorily tested, but are not complete, pending the receipt of some minor parts.

The crane for the Long Island City terminal has not been delivered to date.

Terminal Contract No. 19 — *Greenpoint*

This contract provides for dredging the terminal basin, constructing a new reinforced concrete bulkhead wall and pier, and repairing two existing timber piers and a timber bulkhead at the Greenpoint terminal, borough of Brooklyn. It was awarded to McHarg–Barton Co., being signed on November 24, 1916. Construction work began February 20, 1916. The engineer's preliminary estimate was $193,500.00, the contractor's bid, $207,383.00. The contract price as modified by alterations Nos. 1 and 2 is $211,513.00. Excess quantities to the value of $1,835.00 have been authorized by the Canal Board. The value of work done during the year is $106,170, total done to date, $131,450. The amount paid on extra work orders during the year is $9,356.80, total to date, the same.

S. R. Bellows, Assistant Engineer, is in charge.

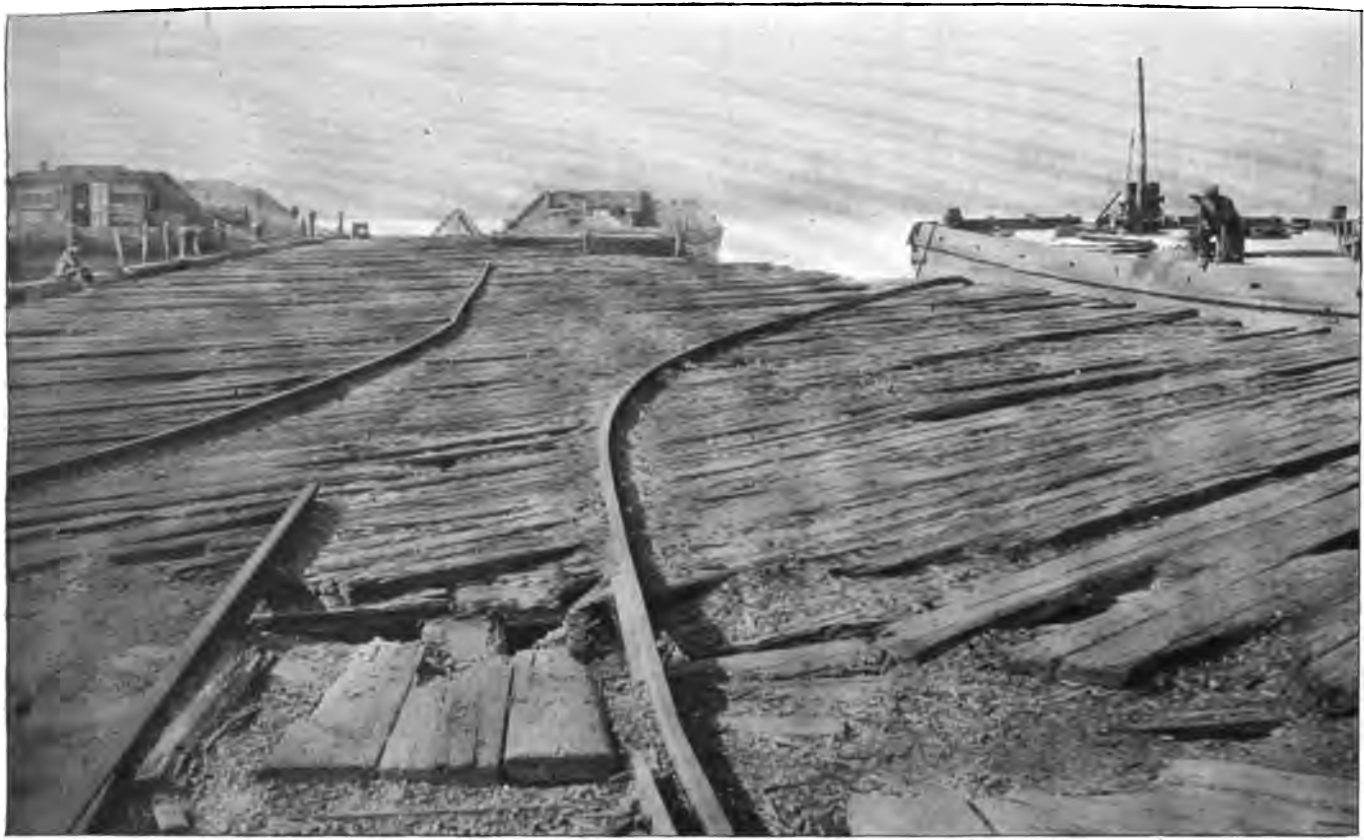
Alteration No. 1, approved by the Canal Board on October 3, 1917, provides for cutting a traffic plate; for strengthening a girder on the south side of the new pier; for changing the location of a capstan recess and for applying a surface treatment for certain timbers. This alteration increases the amount of the contract by $190.00.

Alteration No. 2, approved by the Canal Board on December 27, 1917, provides for removing additional old material and for placing pile dolphins to protect shallow areas. This alteration increases the amount of the contract by $3,940.00.

An extra work order dated December 17, 1917, provides for surrounding certain foundation piles under the new pier with a timber frame and filling with concrete in bags and stone ballast, to provide lateral stiffness. The final account, amounting to $9,356.80, was approved by the Canal Board June 12, 1918.

The terminal basin has been dredged to the required grade except for some small areas where the dredge failed to make the proper depth.

Except for some minor details, the new reinforced concrete bulkhead wall has been completed and repairs to the remaining crib bulkhead are well under way.



SITE OF BARGE CANAL TERMINAL AT GREENPOINT
This pier was repaired and made into a mooring pier. It lies to the south of the new pier.

The new pier is 40 per cent completed. The piles for the timber substructure have been practically all driven. The timber work for the substructure is over 50 per cent completed. All except 40 of the precast reinforced concrete foundation blocks have been made. Blocks have been set and reinforced concrete deck has been built out to row 14, which is one-third the distance out to the outshore end of the pier.

The repairs to the Dupont street pier are completed except for finishing some bolted connections of the timber-work around the low-water elevation.

The contractor's plant has consisted of a dipper-dredge and dump-scows, derrick lighter, floating pile-driver, compressor boat, concrete mixer and plant, etc.

The contract is 63.3 per cent completed.

Terminal Contract No. 38 — West 53d Street, North River

This contract is for constructing a pier at the foot of West 53d street, North river. It was awarded to I. J. Stander & Co., Inc., being signed on October 27, 1917. Construction work began November 1, 1917. The engineer's preliminary estimate was $259,000.00, the contractor's bid, $266,064.80. The contract price as modified by alteration No. 1 is $265,503.16. The value of work done to date is $51,490. The amount paid on extra work orders to date is $405.00.

W. C. Bratton, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board June 19, 1918, changes the type of capstan settings, changes the layout of conduits for electric wires and changes certain column footings. It decreases the contract price by $561.64.

An extra work order dated December 19, 1917, provides for the construction of an engineer's field office and rental of space occupied by it. The final account, amounting to $405.00, was approved by the Canal Board March 20, 1918.

Piles were driven to about 300 feet outshore from the bulkhead and most of the timber framing was completed out to this point. Failure to get adequate deliveries of foundation piles caused delay in progressing the work.

The contractor's plant consisted of a floating pile-driver, a compressor plant, a concrete mixer and tanks for the treatment of lumber with wood preservative.

The contract is 19.4 per cent completed.

Terminal Contract No. 44—*Mott Haven*

This contract is for excavating a terminal basin, constructing a dockwall, grading the upland and building approaches for a Barge canal terminal at Mott Haven, near East 138th street, borough of Bronx. It was awarded to Geo. W. Rogers & Co., Inc., being signed on June 8, 1917. Construction work began June 9, 1917. The engineer's preliminary estimate was $170,300.00, the contractor's bid, $193,651.00. The contract price as modified by alteration No. 1 is $191,195.50. The value of work done during the year is $100,060, total done to date, $120,740.

W. C. Bratton, Assistant Engineer, was in charge until February 1, 1918. Since then, F. T. Lawton, Assistant Engineer, has been in charge.

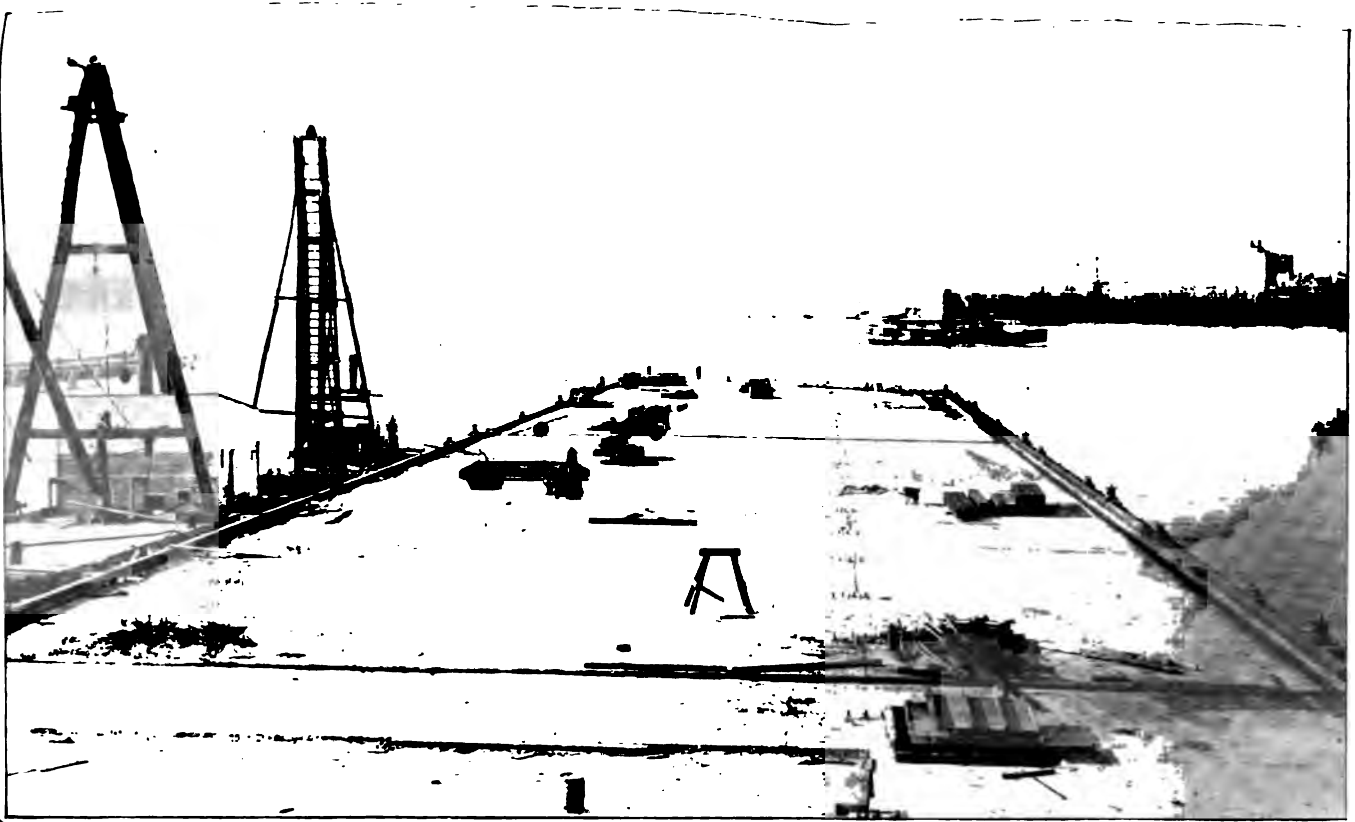
Alteration No. 1, approved by the Canal Board December 19, 1917, provides for changing some details of the dockwall substructure. It decreases the contract price by $2,455.50.

An extra work order dated April 23, 1918, provides for remodeling an existing brick building so that it can be used for an engineer's office.

Work was started June 9 by a clam-shell dredge. The excavation for the terminal basin was continued with one and two dredges to completion on March 21, 1918. Driving of the foundation and bracing piles for the bulkhead wall was almost completed. Considerable progress was made in framing the pile caps, longitudinal timbers and plank flooring of the substructure of the concrete wall. Riprap was placed under about one-half of the wall. Some backfill was placed as material was excavated for the upland grading.

The contractor's plant consisted of two dredges, dump-scows, two floating pile-drivers, derrick, etc.

The contract is 63.1 per cent completed.



BARGE CANAL TERMINAL AT GREENPOINT

New pier, 410 feet long by 90 feet wide. This terminal is situated adjacent to an important manufacturing section in Brooklyn and Long Island City.

UNIV. OF MICH.

Bulkhead at Rockaway Point, L. I.

(Chapter 130, Laws of 1917)

The construction work in connection with the highway adjacent to Fort Tilden, Rockaway Point, L. I., was as follows:

A contract for constructing a timber bulkhead to retain the filling for the highway was let on August 16, 1917, to A. M. Hazell, Inc., for $40,835.35. Work was started on September 2, 1917, and carried on to completion on November 30, 1917. The final estimate amounted to $39,949.31.

A contract for placing sand filling back of the bulkhead was made with the U. S. War Department in connection with filling being done by that department at Fort Tilden. Filling was done with two hydraulic dredges working on the State reservation occasionally in the months of August, September, October and November, 1917. A total of 91,934 cu. yds. of filling were placed at a total cost of $11,055.76. The above work was completed satisfactorily by December 1.

H. W. Hale, Assistant Engineer, was in charge of the work connected with the highway adjacent to Fort Tilden.

Repairs to Landing Pier, Hoffman Island, Quarantine Station

This work was done by the Health Officer of the Port of New York from funds available out of operating income.

The contract was awarded to A. M. Hazell, Inc., on January 3, 1918, for $3,387.00. Additional work was subsequently authorized, which provided for placing 17 additional fender piles, increasing the amount of the contract to $4,152.00. In addition to the above an extra work order dated May 21, 1918, provides for making additional repairs not contemplated by the original contract, due to damage from storms and wood-boring sea worms. This work was done on a basis of cost plus 15 per cent.

Work was started on this contract on April 8, 1918, and was carried to completion on June 19. The final estimate is being prepared.

L. T. Howard, Assistant Engineer, was in charge.

THE FOLLOWING STATEMENTS SHOW THE NAMES, RANK AND COMPENSATION OF ENGINEERS EMPLOYED IN THE EASTERN DIVISION OF THE DEPARTMENT OF THE STATE ENGINEER AND SURVEYOR, TOGETHER WITH INCIDENTAL EXPENSES, FOR THE FISCAL YEAR ENDED JUNE 30, 1918.

Ordinary Repairs to Canals — Erie Canal

Chapter 725, Laws of 1915

ITEM	Total
Incidental Expenses	
Miscellaneous	$1,812 00

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
Geo. D. Williams	Division engineer	$4,800 per year	$2,800 00	$204 16	$3,004 16
L. C. Hulburd	Senior assistant engineer	3,540 per year	357 50	21 46	378 96
R. S. Greenman	Senior assistant engineer	3,300 per year	2,040 00	....	2,040 00
Hattie A. Dell	Stenographer	1,200 per year	800 00	....	800 00
			$5,997 50	$225 62	$6,223 12
Incidental Expenses					
Livery				$1 50	
Postage				50 00	
Miscellaneous				320 26	
					371 76
Total					$6,594 88

Ordinary Repairs to Canals — Champlain Canal

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
Geo. D. Williams	Division engineer	$4,800 per year	$1,200 00	$97 86	$1,297 86
R. S. Greenman	Senior assistant engineer	3,300 per year	1,040 00	....	1,040 00
L. C. Hulburd	Senior assistant engineer	3,540 per year	295 00	21 40	316 40
Hattie A. Dell	Stenographer	1,200 per year	400 00	....	400 00
C. T. Kniskern	Junior assistant engineer	1,800 per year	77 50	....	77 50
J. A. Waddell	Junior assistant engineer	1,800 per year	90 00	....	90 00
			$3,102 50	$119 26	$3,221 76
Incidental Expenses					
Stationery and printing				$37 65	
Postage				46 81	
Miscellaneous				98 90	
					183 36
Total					$3,405 12

Construction of Barge Canal—Head Office Account

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
D. B. La Du	Special deputy state engineer	$7,000 per year	$3,500 02	$808 06	$4,308 08
W. B. Landreth	Deputy state engineer	5,000 per year	....	50 10	50 10
C. H. MacCulloch	Senior assistant engineer	3,540 per year	3,540 00	32 00	3,572 00
D. H. Daley	Senior assistant engineer	3,060 per year	2,610 42	23 58	2,634 00
R. S. Greenman	Senior assistant engineer	3,300 per year	....	976 84	976 84
J. M. C. Quarles de Quarles	Senior assistant engineer	3,060 per year	2,840 00	....	2,840 00
G. G. Underhill	Senior assistant engineer	3,300 per year	3,080 00	536 71	3,616 71
N. E. Whitford	Senior assistant engineer	3,300 per year	3,080 00	280 14	3,360 14
C. H. Wood	Senior assistant engineer	3,060 per year	407 99	29 42	437 41
Henry C. Allen	Consulting engineer	60 00 per day	600 00	63 77	663 77
Henry Goldmark	Consulting engineer	60 00 per day	660 00	126 11	786 11
E. E. Haskell	Consulting engineer	60 00 per day	840 00	145 85	985 85
E. C. Moore	Consulting engineer	60 00 per day	180 00	33 20	213 20
Joseph Ripley	Consulting engineer	7,200 per year	7,105 23	551 18	7,656 41
R. E. Phillips	Engineer of claims	4,200 per year	4,200 00	879 34	5,079 34
C. C. Egbert	Expert in electrical design	20 00 per day	230 00	73 02	303 02
W. E. Brower	Messenger	600 per year	48 71	....	48 71
G. W. Codwise	Confidential assistant	4,000 per year	3,500 00	65 50	3,565 50
Leland D. McCormick	Private secretary	2,400 per year	....	109 77	109 77
C. H. Waters	Private secretary	2,400 per year	....	307 84	307 84
John J. Allen	Canal clerk	1,800 per year	1,800 00	....	1,800 00
P. F. Burmaster	Office assistant	1,020 per year	153 55	....	153 55
C. B. Dunham, Jr	Clerk	2,250 per year	2,112 50	....	2,112 50
John T. Gorman	Clerk	1,800 per year	1,770 00	85 56	1,855 56
J. C. Guffin	Clerk	1,620 per year	1,590 00	....	1,590 00
Jos. F. McManus	Messenger	900 per year	750 00	....	750 00
J. E. F. Minnock	Clerk	1,800 per year	1,770 00	....	1,770 00
Geo. T. Waterman	Clerk	1,200 per year	1,200 00	....	1,200 00
Mary Broughton	Stenographer	720 per year	680 00	....	680 00
Nelle Clark	Stenographer	1,200 per year	1,200 00	....	1,200 00
W. L. Collins	Stenographer	1,200 per year	146 67	....	146 67
Agnes Fogarty	Stenographer	1,200 per year	1,200 00	....	1,200 00
Ella Harrington	Stenographer	1,200 per year	100 00	....	100 00
Mary G. Harrington	Stenographer	1,200 per year	1,200 00	....	1,200 00
Grace Haswell	Stenographer	1,350 per year	1,350 00	....	1,350 00
Anna W. Newton	Stenographer	1,350 per year	1,350 00	....	1,350 00
John J. Tobin	Stenographer	1,800 per year	1,770 00	....	1,770 00
Jessie Weller	Stenographer	600 per year	446 45	....	446 45
H. Auerbach	Assistant engineer	2,208 per year	646 97	....	646 97
T. S. Bailey	Assistant engineer	2,580 per year	2,360 00	....	2,360 00
J. C. Bell	Assistant engineer	2,580 per year	135 24	1 26	136 50
H. W. Benedict	Assistant engineer	2,340 per year	747 00	....	747 00
F. E. Blake	Assistant engineer	2,580 per year	1,461 08	....	1,461 08
E. A. Brainerd	Assistant engineer	2,580 per year	284 35	....	284 35
H. E. Brainard	Assistant engineer	2,580 per year	135 00	....	135 00
G. H. Briggs	Assistant engineer	2,340 per year	301 94	33 88	335 82
Clark Brown	Assistant engineer	2,208 per year	2,208 00	....	2,208 00
N. E. Cottrell	Assistant engineer	1,980 per year	1,398 60	....	1,398 60
G. E. Gibson	Assistant engineer	2,580 per year	1,509 50	73 81	1,583 31
M. W. Grimes	Assistant engineer	2,160 per year	2,055 00	181 83	2,236 83
F. B. Hall	Assistant engineer	2,580 per year	2,104 40	7 40	2,111 80
F. W. Harris	Assistant engineer	2,580 per year	304 31	....	304 31
A. G. Hayden	Assistant engineer	2,580 per year	747 42	....	747 42
Geo. D. Kellogg	Assistant engineer	2,580 per year	1,506 92	....	1,506 92
O. F. Lewis	Assistant engineer	2,208 per year	71 23	....	71 23
J. B. Maguire	Assistant engineer	2,340 per year	1,845 50	....	1,845 50
John McBride	Assistant engineer	2,340 per year	394 27	95	395 22
W. S. McDowell	Assistant engineer	2,580 per year	2,327 00	....	2,327 00
R. H. Merrill	Assistant engineer	2,580 per year	2,407 00	413 21	2,820 21
C. W. Morris, Jr	Assistant engineer	2,160 per year	1,327 50	....	1,327 50
J. T. Murphy	Assistant engineer	2,340 per year	1,739 29	....	1,739 29
E. P. Neuschwander	Assistant engineer	2,580 per year	2,153 47	16 51	2,169 93
John P. Newton	Assistant engineer	2,340 per year	585 00	....	585 00
J. A. O'Donnell	Assistant engineer	2,160 per year	1,648 37	....	1,648 37
D. W. Overocker	Assistant engineer	2,208 per year	1,104 00	....	1,104 00
J. M. Prior	Assistant engineer	2,160 per year	138 38	....	138 38
C. E. Quimby	Assistant engineer	1,980 per year	644 03	....	644 03
E. G. Raynor	Assistant engineer	2,580 per year	2,283 00	....	2,283 00
L. S. Rickard	Assistant engineer	2,160 per year	2,115 00	7 64	2,122 64
H. J. Scheuermann	Assistant engineer	2,580 per year	2,205 99	20 02	2,226 01

Construction of Barge Canal — Head Office Account — (Cont'd)

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
E. G. Semon	Assistant engineer	$2,340 per year	$1,783 81	$59 09	$1,842 90
H. S. Sparr	Assistant engineer	2,160 per year	945 00		945 00
Rupert Sturtevant	Assistant engineer	2,580 per year	762 90	27 37	790 27
S. R. Tighe	Assistant engineer	1,980 per year	1,141 70		1,141 70
W. J. Weighmann	Assistant engineer	2,208 per year	1,288 00		1,288 00
L. C. West	Assistant engineer	2,340 per year	325 39		325 39
J. M. Angus	Junior assistant engineer	1,800 per year	136 61		136 61
Leroy Bamer	Junior assistant engineer	1,440 per year	696 77		696 77
J. F. Blaise	Junior assistant engineer	1,800 per year	824 31		824 31
C. D. Burrus	Junior assistant engineer	1,800 per year	1,050 00		1,050 00
W. A. Dawson	Junior assistant engineer	1,200 per year	385 48		385 48
Leroy Greenalch	Junior assistant engineer	1,800 per year	33 87		33 87
Bernard Gazier	Junior assistant engineer	1,320 per year	400 00		400 00
F. B. Faille	Junior assistant engineer	1,560 per year	226 46	4 55	231 01
A. Gordon	Junior assistant engineer	1,680 per year	373 04		373 04
W. R. Gordon	Junior assistant engineer	1,680 per year	85 81		85 81
J. S. Heath	Junior assistant engineer	1,320 per year	396 77		396 77
W. J. Henk	Junior assistant engineer	1,680 per year	1,445 51		1,445 51
W. J. Henry, Jr	Junior assistant engineer	1,200 per year	401 07		401 07
C. E. Hoehn	Junior assistant engineer	1,320 per year	330 00		330 00
E. Hulsapple	Junior assistant engineer	1,560 per year	431 10		431 10
J. S. Hyman	Junior assistant engineer	1,800 per year	495 97		495 97
G. B. Kelley	Junior assistant engineer	1,680 per year	1,440 00		1,440 00
H. C. Kelly	Junior assistant engineer	1,680 per year	219 03		219 03
C. T. Kniskern	Junior assistant engineer	1,800 per year	1,369 78		1,369 78
Jacob Labishiner	Junior assistant engineer	1,200 per year	960 83		960 83
J. P. Larsen	Junior assistant engineer	1,200 per year	87 09		87 09
Geo. D. Meer	Junior assistant engineer	1,800 per year	1,550 00	70 38	1,620 38
Charles Messina	Junior assistant engineer	1,560 per year	50 32		50 32
P. R. Murray	Junior assistant engineer	1,800 per year	1,590 00	9 62	1,599 62
H. S. Roberts	Junior assistant engineer	1,320 per year	330 00		330 00
Geo. L. Schillner	Junior assistant engineer	1,680 per year	1,570 00		1,570 00
Paul Scully	Junior assistant engineer	1,320 per year	1,320 00		1,320 00
W. L. Shahan	Junior assistant engineer	1,200 per year	361 08		361 08
R. B. Smith	Junior assistant engineer	1,800 per year	799 68		799 68
G. G. Sweet	Junior assistant engineer	1,560 per year	1,560 00		1,560 00
L. E. Turpit	Junior assistant engineer	1,320 per year	1,041 94		1,041 94
F. M. Van Zile	Junior assistant engineer	1,680 per year	1,467 26		1,467 26
S. T. Vosburgh	Junior assistant engineer	1,680 per year	1,190 00	76 59	1,266 59
L. B. Westfall	Junior assistant engineer	1,800 per year	1,691 13		1,691 13
C. P. Wiweke	Junior assistant engineer	1,800 per year	955 64		955 64
M. E. Baker	Engineering assistant	1,020 per year	970 00	7 53	977 53
H. A. Dayton	Engineering assistant	840 per year	316 00		316 00
J. F. Duffy	Engineering assistant	1,080 per year	871 70		871 70
C. J. Grace, Jr	Engineering assistant	840 per year	140 00		140 00
A. E. Halligan	Engineering assistant	1,080 per year	45 00		45 00
C. L. Hawkins	Engineering assistant	840 per year	184 48		184 48
Wm. Leffler	Engineering assistant	840 per year	59 92		59 92
R. H. Slocum	Provisional engineering assistant	840 per year	21 00	4 60	25 60
W. C. Strecker	Engineering assistant	840 per year	9 03		9 03
E. V. Allendorph	Inspector of engineering works	1,560 per year	1,560 00		1,560 00
M. S. Bierce	Inspector of engineering works	1,560 per year	1,560 00		1,560 00
F. B. Kraft	Inspector of engineering works	1,560 per year	1,560 00		1,560 00
E. H. Wetsel	Inspector of engineering works	1,560 per year	1,560 00		1,560 00
G. C. Schaefer	Boatman	3 00 per day	288 00	104 15	392 15
Wm. J. Atkinson	Laborer	2 50 per day	912 50		912 50
John Cullen	Laborer	2 50 per day	780 00		780 00
James Daley	Laborer	2 50 per day	255 00		255 00
James Dolan	Laborer	2 50 per day	682 50		682 50
John Dooley	Laborer	2 50 per day	565 00		565 00
W. A. Doyle	Laborer	2 50 per day	30 00		30 00
Wm. Felstead	Laborer	2 50 per day	687 50		687 50
A. A. Finger	Laborer	2 50 per day	30 00		30 00
Joseph Habbinger	Laborer	2 50 per day	357 50		357 50
Sebastian Habbinger	Laborer	2 50 per day	460 00		460 00
David Horner	Laborer	2 50 per day	810 00		810 00
Henry Kling	Laborer	2 50 per day	65 00		65 00
J. M. MacDonald	Laborer	2 50 per day	780 00		780 00
Henry MacFarlane	Laborer	2 50 per day	95 00		95 00
G. F. Marcoux	Laborer	2 50 per day	672 50	8 17	680 67
Harry McMahon	Laborer	2 50 per day	35 00		35 00
Filadelfo Mondello	Laborer	2 50 per day	780 00		780 00

Construction of Barge Canal — Head Office Account — (Concl'd)

Chapter 147, Laws of 1903, amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
C. M. Pepson	Laborer	$3 50 per day	$200 00	....	$200 00
Thomas Rattoone	Laborer	2 50 per day	770 00	....	770 00
W. J. Smith	Laborer	2 50 per day	912 50	....	912 50
H. J. Soules	Laborer	2 50 per day	780 00	....	780 00
Henry Strobel	Laborer	2 50 per day	780 00	....	780 00
M. J. Tanner	Laborer	2 50 per day	802 50	....	802 50
J. R. Van Schoonhoven	Laborer	2 50 per day	780 00	....	780 00
Edward Van Truen	Laborer	2 50 per day	720 00	....	720 00
S. J. Cleveland	Carpenter and model maker	3 50 per day	147 00	....	147 00
Sibella Carroll	Charwoman	480 per year	417 50	....	417 50
E. M. Chamberlain	Night watchman	960 per year	960 00	....	960 00
F. M. Hill	Title maker	1,560 per year	1,560 00	....	1,560 00
Theresa M. Stubbing	Telephone operator	840 per year	810 00	....	810 00
H. J. Richardson	Photographer	1,680 per year	36 13	$35 31	71 44
Catherine Ryan	Charwoman	480 per year	33 33	....	33 33
Frank E. Davis	Chauffeur	1,650 per year	812 50	51 13	863 63
John J. Finn	Chauffeur	1,650 per year	818 75	213 95	1,032 70
Harvey W. Nutter	Chauffeur	1,650 per year	1,637 50	207 75	1,845 25
			$161,519 99	$6,814 69	$168,334 68

Incidental Expenses

Instruments, tools and appliances	$238 23	
Office rent	3,763 24	
Fuel and light	45 36	
Stationery and printing	5,243 49	
Postage	1,750 44	
Telephone and telegraph	2,252 33	
Miscellaneous	12,127 33	
		25,420 42
Total		$193,755 10

Construction of Barge Canal — Erie Canal

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
E. A. Lamb	Senior assistant engineer	$3,300 per year	$3,080 00	$339 63	$3,419 63
D. C. Wedgeworth	Senior assistant engineer	3,060 per year	2,012 58	143 37	2,155 95
Parkes D. Wendell	Estimate clerk	3,000 per year	3,000 00	....	3,000 00
G. P. Gleason	Stenographer to division engineer	2,100 per year	1,050 00	....	1,050 00
Edna M. Pickert	Stenographer	1,200 per year	1,183 33	....	1,183 33
Joseph L. Richards	Stenographer	1,200 per year	550 00	....	550 00
L. R. Spencer	Stenographer	900 per year	237 10	....	237 10
M. J. Sullivan	Stenographer	1,200 per year	600 00	....	600 00
A. G. Austin	Assistant engineer	1,980 per year	1,075 16	272 83	1,347 99
J. C. Bell	Assistant engineer	2,580 per year	1,471 01	112 38	1,583 39
W. C. Benedict	Assistant engineer	2,340 per year	954 24	232 45	1,186 69
G. A. Ensign	Assistant engineer	2,160 per year	1,208 91	....	1,208 91
F. W. Harris	Assistant engineer	2,580 per year	536 57	76 14	612 71
R. L. Holt	Assistant engineer	2,208 per year	454 66	....	454 66
M. E. James	Assistant engineer	2,580 per year	2,520 00	355 59	2,875 59
B. T. Kenyon	Assistant engineer	2,580 per year	2,440 00	659 82	3,099 82
H. C. Kline	Assistant engineer	2,340 per year	976 67	83 32	1,059 99
T. J. Loonie	Assistant engineer	1,980 per year	1,772 42	....	1,772 42
A. T. Mussi	Assistant engineer	2,340 per year	1,940 90	408 85	2,349 75
C. G. Ranney	Assistant engineer	2,580 per year	2,395 76	603 37	2,999 13
C. R. Waters	Assistant engineer	2,208 per year	184 00	13 65	197 65
T. L. Watkins	Assistant engineer	2,580 per year	1,035 00	....	1,035 00
L. C. West	Assistant engineer	2,208 per year	363 00	20 68	383 68
Leroy Bailey	Junior assistant engineer	1,200 per year	824 63	....	824 63

Construction of Barge Canal — Erie Canal — (Continued)

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
W. G. Baxter	Junior assistant engineer	$1,200 per year	$570 00		$570 00
L. J. Bradley	Junior assistant engineer	1,800 per year	1,546 13		1,546 13
A H. Charchian	Junior assistant engineer	1,200 per year	946 24		946 24
J. J. Carroll	Junior assistant engineer	1,320 per year	183 58		183 58
Robert E. Crowley	Junior assistant engineer	1,200 per year	384 19		384 19
E. F. Dossert	Junior assistant engineer	1,680 per year	1,540 00	$31 01	1,571 01
L. W. Douglas	Junior assistant engineer	1,200 per year	548 39		548 39
H. F. Fagan	Junior assistant engineer	1,680 per year	390 00		390 00
John Fdelstein	Junior assistant engineer	1,440 per year	666 77		666 77
F. B. Faille	Junior assistant engineer	1,560 per year	1,065 35	6 25	1,071 60
F. E. Gillen	Junior assistant engineer	1,800 per year	1,751 94		1,751 94
David Gordon	Junior assistant engineer	1,200 per year	519 79		519 79
A. A. Griffin	Junior assistant engineer	1,320 per year	660 00		660 00
W. M. Griffith	Junior assistant engineer	1,800 per year	1,730 00	109 49	1,839 49
M. T. Harvey	Junior assistant engineer	1,200 per year	220 97		220 97
Samuel Jaffe	Junior assistant engineer	1,200 per year	90 86		90 86
H. W. Jewell	Junior assistant engineer	1,800 per year	1,711 93	45 57	1,757 50
W. G. Keeshan	Junior assistant engineer	1,110 per year	17 90		17 90
T. R. Kerslake	Junior assistant engineer	1,320 per year	160 50	1 79	162 29
C. T. McLean	Junior assistant engineer	1,110 per year	283 95		283 95
Wm. Mangan	Junior assistant engineer	1,440 per year	1,392 26		1,392 26
A. J. Mantica	Junior assistant engineer	1,650 per year	672 00		672 00
Charles Montag	Junior assistant engineer	1,560 per year	16 77		16 77
M. J. Quinn	Junior assistant engineer	1,320 per year	1,054 62	27 00	1,081 62
H. L. Ramage	Junior assistant engineer	1,200 per year	257 63		257 63
Frank C. Rogers	Junior assistant engineer	1,200 per year	110 97		110 97
T. H. Sherman	Junior assistant engineer	1,200 per year	46 67		46 67
Nathan Simon	Junior assistant engineer	1,200 per year	114 62		114 62
R. B. Smith	Junior assistant engineer	1,680 per year	650 32		650 32
W. C. Strecker	Junior assistant engineer	1,200 per year	853 87		853 87
J. A. Waddell	Junior assistant engineer	1,800 per year	16 77		16 77
C. A. Wilbur	Junior assistant engineer	1,800 per year	1,730 00	30 35	1,760 35
A. F. Bayly	Engineering assistant	960 per year	41 29		41 29
F. S. Belotti	Engineering assistant	1,080 per year	997 39		997 39
R. B. Deutsch	Engineering assistant	840 per year	551 35		551 35
A. K. Erb	Engineering assistant	840 per year	9 03		9 03
E. E. Fobes	Engineering assistant	840 per year	700 83		700 83
D. A. Gillette	Engineering assistant	840 per year	735 68		735 68
H. H. Glosser	Engineering assistant	840 per year	128 71		128 71
A. H. Goodwin	Engineering assistant	840 per year	241 61		241 61
G. Hinds	Engineering assistant	840 per year	833 50		833 50
J. B. Kinney	Engineering assistant	840 per year	184 33		184 33
J. C. Quinterro	Engineering assistant	840 per year	826 00		826 00
E. C. Reusswig	Engineering assistant	900 per year	300 00		300 00
T. K. Smith	Engineering assistant	840 per year	501 36		501 36
F. B. Stoddard	Engineering assistant	1,080 per year	840 32		840 32
Isaac Sugerman	Engineering assistant	840 per year	156 33		156 33
C. B. Teco	Engineering assistant	1,080 pery ear	1,030 00	24 27	1,054 27
George Terwilliger	Engineering assistant	1,020 per year	509 45		509 45
H. E. Thompson	Engineering assistant	840 per year	70 30		70 30
W. L. Weinbender	Engineering assistant	840 per year	210 00		210 00
L. W. Donnelly	Inspector of engineering works	1,560 per year	269 23		269 23
W. H. H. Klinkhart	Inspector of engineering works	1,560 per year	157 26		157 26
S. Y. MacGregor	Inspector of engineering works	1,560 per year	650 00		650 00
T. M. Oliver	Inspector of engineering works	1,560 per year	1,547 42		1,547 42
Howard S. Deal	Boatman	3 00 per day	330 00		330 00
Harold Folmsbee	Boatman	3 00 per day	782 50		782 50
J. Hayes	Boatman	3 00 per day	543 00		543 00
John Keenan	Boatman	3 00 per day	234 00		234 00
R. Murray	Boatman	3 00 per day	240 00		240 00
G. C. Schaefer	Boatman	3 00 per day	96 00	9 53	105 53
A. B. Starin	Boatman	3 00 per day	873 00		873 00
Peter Barton	Laborer	2 50 per day	32 50		32 50
Archie Bellrose	Laborer	2 50 per day	37 50		37 50
Sylvester Cogley	Laborer	2 50 per day	252 50		252 50
Raymond Comrie	Laborer	2 50 per day	472 50		472 50
H. L. Crouse	Laborer	2 50 per day	660 00		660 00
Thomas Dalton	Laborer	2 50 per day	737 50		737 50
Wm. DeForest	Laborer	2 50 per day	750 00		750 00
R. H. Kay	Laborer	2 50 per day	750 00		750 00
John Lavery	Laborer	2 50 per day	912 50		912 50
L. L. Lounsbery	Laborer	2 50 per day	192 50		192 50

Construction of Barge Canal — Erie Canal — (Concluded)

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
T. F. Madden	Laborer	$2 50 per day	$372 50		$372 50
Harvey Martin	Laborer	2 50 per day	272 50		272 50
M. Metz	Laborer	2 50 per day	862 50		862 50
G. W. Olmstead	Laborer	2 50 per day	35 00		35 00
Paul Sajta	Laborer	2 50 per day	765 00		765 00
John Shook	Laborer	2 50 per day	67 50		67 50
A. W. Wright	Laborer	2 50 per day	32 50		32 50
Stephen Zierak	Laborer	2 50 per day	177 50		177 50
H. J. Richardson	Photographer	1,680 per year	896 83	$59 96	956 79
Harry Bishton	Gage reader	14 per month	168 00		168 00
C. G. Boyd	Gage reader	14 per month	14 00		14 00
Guy Bracebridge	Gage reader	5 per month	30 00		30 00
Sanford Bracebridge	Gage reader	5 per month	30 00		30 00
R. C. Dowling	Gage reader	7 per month	84 00		84 00
P. C. Earl	Gage reader	7 per month	84 00		84 00
Charles Hansen	Gage reader	7 per month	7 00		7 00
Lloyd Kast	Gage reader	7 per month	84 00		84 00
Richard Kilmartin	Gage reader	7 per month	84 00		84 00
Clark Kyser	Gage reader	7 per month	70 00		70 00
Peter Lebeis	Gage reader	7 per month	63 00		63 00
Oscar Lockwood	Gage reader	7 per month	84 00		84 00
C. F. Loring	Gage reader	7 per month	84 00		84 00
Joseph Millington	Gage reader	12 per month	24 00		24 00
H. Moyer	Gage reader	5 per month	55 00		50 00
James Murphy	Gage reader	9 per month	94 00		94 00
Fred Pentland	Gage reader	9 per month	94 00		94 00
F. C. Pickard	Gage reader	7 per month	56 00		56 00
J. Roepmeyer, Jr	Gage reader	10 per month	120 00		120 00
George Snell	Gage reader	7 per month	7 00		7 00
J. W. Spencer	Gage reader	7 per month	56 00		56 00
Wm. C. Vroman	Gage reader	7 per month	11 29		11 29
Mason E. Vite	Gage reader	7 per month	84 00		84 00
[illegible] Vian	Gage reader	10 per month	120 00		120 00
C. E. Way	Gage reader	10 per month	120 00		120 00
C. W. Young	Gage reader	14 per month	112 00		112 00
Harry J. Young	Gage reader	7 per month	7 00		7 00
W. E. Young	Gage reader	7 per month	56 00		56 00
			$79,047 44	$3,667 30	$82,714 74

Incidental Expenses

Instruments, tools and appliances	$8 35	
Office rent	1,904 00	
Fuel and light	399 21	
Stationery and printing	14 86	
Postage	129 92	
Telephone and telegraph	592 81	
Miscellaneous	2,104 23	
		5,153 38
Total		$87,868 12

Construction of Barge Canal — Champlain Canal

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
John Schade	Cashier	$2,100 per year	$1,925 00		$1,925 00
J. L. Pinney	Stenographer	1,320 per year	1,000 00		1,000 00
W. L. Coler	Assistant engineer	2,580 per year	370 50	$9 34	379 84
C. A. Curtis	Assistant engineer	2,580 per year	2,397 00	345 25	2,742 25
J. B. Poste	Assistant engineer	2,340 per year	2,340 00	1,598 33	3,938 33
E. G. Gilman	Assistant engineer	2,160 per year	1,065 00	17 69	1,082 69

Construction of Barge Canal—Champlain Canal—(Continued)

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
R. D. Hayes	Assistant engineer	$2,580 per year	$3,012 50	$1,120 77	$3,133 27
John McBride	Assistant engineer	2,340 per year	1,322 99	174 77	1,497 76
T. L. Watkins	Assistant engineer	2,580 per year	215 00		215 00
H. I. Bristol	Junior assistant engineer	1,200 per year	930 00		930 00
D. E. Damon	Junior assistant engineer	1,800 per year	1,701 77		1,701 77
G. E. Deutschbein	Junior assistant engineer	1,800 per year	1,730 00		1,730 00
Samuel Jaffe	Junior assistant engineer	1,200 per year	70 00		70 00
B. A. Krotinger	Junior assistant engineer	1,080 per year	126 58		126 58
John F. Larsen	Junior assistant engineer	1,320 per year	783 74		783 74
J. H. McEntee	Junior assistant engineer	1,320 per year	517 00		517 00
G. C. Nash	Junior assistant engineer	1,200 per year	183 87		183 87
Mott Palmer	Junior assistant engineer	1,800 per year	1,770 00	679 91	2,449 91
T. H. Sherman	Junior assistant engineer	1,200 per year	330 00		330 00
J. P. Walsh	Junior assistant engineer	1,440 per year	120 00		120 00
W. J. Curtis	Engineering assistant	1,080 per year	867 00		867 00
Harry A. Dayton	Engineering assistant	840 per year	140 00		140 00
H. G. Gunther	Engineering assistant	840 per year	185 68		185 68
Nathaniel Merriman	Engineering assistant	840 per year	102 66		103 66
Geo. A. Rogers	Engineering assistant	1,080 per year	885 00		885 00
Thomas Ryan, Jr	Engineering assistant	1,020 per year	689 15		689 15
Geo. Terwilliger	Engineering assistant	1,020 per year	21 94		21 94
F. W. Yates	Engineering assistant	840 per year	285 00		285 00
F. G. Tilton	Inspector of engineering works	1,560 per year	410 97		410 97
B. K. Ellis	Boatman	3 00 per day	791 50		791 50
Willard Joslin	Boatman	3 00 per day	264 00		264 00
John Keenan	Boatman	3 00 per day	60 00		60 00
J. C. Leyland	Boatman	3 00 per day	1,017 00		1,017 00
M. McConnell	Boatman	3 00 per day	645 00		645 00
G. E. McElroy	Boatman	3 00 per day	495 00		495 00
N. H. McHerd	Boatman	3 00 per day	1,095 00		1,095 00
Harry McMahon	Boatman	3 00 per day	548 00		548 00
Ephraim Newland	Boatman	3 00 per day	189 00		189 00
Edward Ryan	Boatman	3 00 per day	945 00		945 00
G. C. Schaefer	Boatman	3 00 per day	582 00		582 00
F. H. Crandall	Laborer	2 50 per day	782 50		782 50
Fred Hilfinger	Laborer	2 50 per day	782 50		782 50
James Husband	Laborer	2 50 per day	300 00		300 00
M. Killeen	Laborer	2 50 per day	82 50		82 50
James Malin	Laborer	2 50 per day	897 50		897 50
Percy Mattimore	Laborer	2 50 per day	375 00		375 00
John McCarthy, Jr	Laborer	2 50 per day	395 00		395 00
Lewis Saunders	Laborer	2 50 per day	40 00		40 00
G. M. Weaver	Laborer	2 50 per day	515 00		515 00
Thos. Welch	Laborer	2 50 per day	222 50		222 50
H. J. Richardson	Photographer	1,680 per year	521 83	19 65	541 48
W. D. Barber	Gage reader	7 per month	70 00		70 00
E. H. Bowker	Gage reader	7 per month	56 00		56 00
F. E. Chapman	Gage reader	8 per month	88 00		88 00
Chas. Cheney	Gage reader	7 per month	84 00		84 00
S. L. Cluett	Gage reader	7 per month	35 00		35 00
J. H. Donnelly	Gage reader	7 per month	84 00		84 00
G. E. Fifield	Gage reader	7 per month	84 00		84 00
A. B. Fischer	Gage reader	7 per month	56 00		56 00
W. B. Dunstan	Gage reader	7 per month	77 00		77 00
John T. Morris	Gage reader	8 per month	96 00		96 00
G. F. Mayhew	Gage reader	8 per month	8 00		8 00
Henry Palmer	Gage reader	7 per month	14 00		14 00
Byron Stedman	Gage reader	7 per month	84 00		84 00
F. H. Wells	Gage reader	7 per month	84 00		84 00
			$36,964 18	$3,965 71	$40,929 89

Incidental Expenses

Office rent	$570 00	
Fuel and light	98 31	
Stationery and printing	17 60	
Postage	153 84	
Telephone and telegraph	300 10	
Miscellaneous	1,635 13	
		2,824 98
Total		$43,754 87

Construction of Barge Canal Terminals

Chapter 746, Laws of 1911, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
D. B. La Du	Special deputy state engineer	$7,000 per year	$3,499 98	$625 58	$4,125 56
Edward Anderberg	Senior assistant engineer	3,300 per year	2,605 48	236 46	2,841 94
A. W. Conner	Senior assistant engineer	3,060 per year	2,840 00	161 68	3,001 68
D. H. Daley	Senior assistant engineer	3,060 per year	229 58	....	229 58
R. S. Greenman	Senior assistant engineer	3,300 per year	....	114 61	114 61
Maurice Williams	Senior assistant engineer	2,820 per year	2,247 41	540 37	2,787 78
C. H. Wood	Senior assistant engineer	3,060 per year	1,086 98	89 09	1,176 07
B. F. Cresson	Expert on terminal construction	40 00 per day	1,240 00	135 31	1,375 31
E. P. Goodrich	Expert on terminal construction	40 00 per day	1,240 00	119 61	1,359 61
H. McL. Harding	Expert on terminal construction	40 00 per day	1,120 00	118 92	1,238 92
G. W. Codwise	Confidential assistant	4,000 per year	301 07	134 32	435 39
L. D. McCormick	Private secretary	2,400 per year	....	55 83	55 83
C. R. Waters	Private secretary	2,400 per year	....	277 42	277 42
W. S. Ryan	Confidential clerk and stenographer	2,400 per year	....	32 05	32 05
Fred C. Stahl	Bookkeeper	1,800 per year	1,800 00	....	1,800 00
C. B. Dunham, Jr	Clerk	2,250 per year	....	18 06	18 06
J. E. Stewart	Clerk	1,800 per year	1,800 00	....	1,800 00
G. P. Gleason	Stenographer to division engineer	2,100 per year	1,050 00	....	1,050 00
P. J. Gaffey	Stenographer	1,200 per year	374 19	....	374 19
Emily P. Hofman	Stenographer	780 per year	390 00	....	390 00
J. E. Pinney	Stenographer	1,320 per year	250 00	....	250 00
M. J. Sullivan	Stenographer	1,200 per year	600 00	....	600 00
Henry Auerbach	Assistant engineer	2,208 per year	89 03	....	89 03
S. R. Bellows	Assistant engineer	2,580 per year	2,440 00	106 84	2,546 84
W. C. Benedict	Assistant engineer	2,340 per year	6 29	5 95	12 24
F. E. Blake	Assistant engineer	2,580 per year	1,118 92	....	1,118 92
W. C. Bratton	Assistant engineer	2,580 per year	2,283 00	129 75	2,412 75
P. H. Budd	Assistant engineer	2,208 per year	818 19	....	818 19
W. L. Caler	Assistant engineer	2,580 per year	2,069 50	444 82	2,514 32
H. L. Clarke	Assistant engineer	2,340 per year	1,264 35	196 51	1,460 86
Horace Corbin	Assistant engineer	2,580 per year	2,320 71	....	2,320 71
N. E. Cottrell	Assistant engineer	1,980 per year	581 40	....	581 40
C. A. Curtis	Assistant engineer	2,580 per year	43 00	22 46	65 46
J. B. Doughty	Assistant engineer	2,160 per year	2,035 00	....	2,035 00
G. A. Ensign	Assistant engineer	2,160 per year	176 90	....	176 90
Ely Gamse	Assistant engineer	2,580 per year	2,353 71	107 43	2,461 14
R. G. Gibson	Assistant engineer	1,980 per year	990 00	78 70	1,068 70
H. W. Hale	Assistant engineer	2,160 per year	42 93	....	42 93
F. B. Hall	Assistant engineer	2,580 per year	153 90	....	153 90
F. W. Harris	Assistant engineer	2,580 per year	543 52	85 95	629 47
A. G. Hayden	Assistant engineer	2,580 per year	1,232 67	....	1,232 67
R. D. Hayes	Assistant engineer	2,580 per year	507 50	47 47	554 97
L. T. Howard	Assistant engineer	2,580 per year	1,868 11	134 72	2,002 83
H. C. Kline	Assistant engineer	2,580 per year	1,312 83	31 76	1,344 59
F. T. Lawton	Assistant engineer	2,340 per year	1,193 93	31 30	1,225 23
T. J. Loomis	Assistant engineer	1,980 per year	149 03	....	149 03
J. B. Maguire	Assistant engineer	2,340 per year	373 50	....	373 50
C. W. Morris, Jr	Assistant engineer	2,160 per year	667 50	9 07	676 57
A. P. Musi	Assistant engineer	2,340 per year	278 10	20 25	298 35
E. P. Neuschwander	Assistant engineer	2,580 per year	426 53	....	426 53
J. A. O'Donnell	Assistant engineer	2,160 per year	346 63	....	346 63
K. C. Olcott	Assistant engineer	2,208 per year	2,208 00	....	2,208 00
C. E. Quimby	Assistant engineer	2,160 per year	947 90	....	947 90
A. C. Richards	Assistant engineer	2,580 per year	2,407 00	....	2,407 00
H. J. Scheuermann	Assistant engineer	2,580 per year	374 01	5 16	379 17
E. G. Semon	Assistant engineer	2,340 per year	481 64	....	481 64
H. S. Sparr	Assistant engineer	2,160 per year	542 90	....	542 90
R. Sturtevant	Assistant engineer	2,580 per year	1,817 10	175 57	1,992 67
J. R. Tighe	Assistant engineer	1,980 per year	838 30	....	838 30
C. R. Waters	Assistant engineer	2,208 per year	101 10	33 97	135 07
T. L. Watkins	Assistant engineer	2,580 per year	1,270 00	20 16	1,290 16
W. J. Weigmann	Assistant engineer	2,208 per year	368 00	....	368 00
L. C. West	Assistant engineer	2,340 per year	845 15	....	845 15
H. T. Arnold	Junior assistant engineer	1,800 per year	1,115 38	....	1,115 38
LeRoy Bailey	Junior assistant engineer	1,200 per year	65 37	....	65 37
LeRoy Bamer	Junior assistant engineer	1,440 per year	60 00	....	60 00
J. F. Blaise	Junior assistant engineer	1,800 per year	404 03	....	404 03
J. H. Bovier	Junior assistant engineer	1,800 per year	14 51	....	14 51
R. E. Crowley	Junior assistant engineer	1,200 per year	131 94	....	131 94

Construction of Barge Canal Terminals — (Continued)

Chapter 746, Laws of 1911, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
J. A. Daly	Junior assistant engineer	$1,320 per year	$1,320 00	....	$1,320 00
W. A. Dawson	Junior assistant engineer	1,200 per year	535 06	....	535 06
L. A. Denner, Jr.	Junior assistant engineer	1,440 per year	1,370 00	....	1,370 00
J. Edelstein	Junior assistant engineer	1,440 per year	715 23	....	715 23
E. J. Donlon	Junior assistant engineer	1,110 per year	805 44	....	805 44
B. Gasier	Junior assistant engineer	1,320 per year	850 00	....	850 00
David Gordon	Junior assistant engineer	1,200 per year	53 33	....	53 33
A. E. Green	Junior assistant engineer	1,800 per year	308 00	....	308 00
LeRoy Greenalch	Junior assistant engineer	1,800 per year	643 55	....	643 55
J. E. Hall	Junior assistant engineer	1,800 per year	1,730 00	....	1,730 00
M. T. Harvey	Junior assistant engineer	1,200 per year	29 03	....	29 03
J. S. Heath	Junior assistant engineer	1,320 per year	579 03	....	579 03
D. L. Hendler	Junior assistant engineer	1,110 per year	608 21	....	608 21
W. J. Henk	Junior assistant engineer	1,560 per year	94 49	....	94 49
N. D. Hyde	Junior assistant engineer	1,560 per year	260 00	....	260 00
E. Hulsapple	Junior assistant engineer	1,560 per year	78 00	....	78 00
J. S. Hyman	Junior assistant engineer	1,800 per year	680 00	$16 45	696 45
Samuel Jaffe	Junior assistant engineer	1,200 per year	307 20	....	307 20
Harry Kabak	Junior assistant engineer	1,200 per year	586 24	....	586 24
C. F. Keale	Junior assistant engineer	1,440 per year	838 62	....	838 62
W. G. Keeshan	Junior assistant engineer	1,200 per year	1,033 79	....	1,033 79
W. Kemp, 2d	Junior assistant engineer	1,560 per year	712 90	....	712 90
B. A. Krotinger	Junior assistant engineer	1,560 per year	286 00	....	286 00
S. Levine	Junior assistant engineer	1,680 per year	95 45	....	95 45
J. H. McEntee	Junior assistant engineer	1,440 per year	245 80	....	245 80
G. D. Meer	Junior assistant engineer	1,680 per year	70 00	....	70 00
Chas. Messina	Junior assistant engineer	1,560 per year	699 77	....	699 77
Chas. Montag	Junior assistant engineer	1,680 par year	718 67	....	718 67
D. C. Ogsbury	Junior assistant engineer	1,800 per year	1,770 00	....	1,770 00
M. J. Quinn	Junior assistant engineer	1,320 per year	75 46	14 79	90 25
W. L. Shahan	Junior assistant engineer	1,200 per year	55 59	....	55 59
T. H. Sherman	Junior assistant engineer	1,200 per year	200 00	....	200 00
R. B. Smith	Junior assistant engineer	1,680 per year	280 00	7 29	287 29
Isie Spahn	Junior assistant engineer	1,200 per year	1,147 68	....	1,147 68
Isaac Stern	Junior assistant engineer	1,320 per year	1,014 51	....	1,014 51
L. E. Turpit	Junior assistant engineer	1,200 per year	55 59	....	55 59
F. M. Van Zile	Junior assistant engineer	1,560 per year	102 74	....	102 74
L. B. Westfall	Junior assistant engineer	1,800 per year	108 87	....	108 87
J. H. Williams	Junior assistant engineer	1,560 per year	872 26	....	872 26
C. P. Wiweke	Junior assistant engineer	1,800 per year	844 36	....	844 36
F. A. Belotti	Engineering assistant	1,080 per year	21 00	....	21 00
J. F. Duffy	Engineering assistant	1,080 per year	173 30	....	173 30
W. R. Glock	Engineering assistant	900 per year	147 58	....	147 58
H. H. Glosser	Engineering assistant	900 per year	377 90	....	377 90
A. E. Halligan	Engineering assistant	1,080 per year	1,000 00	....	1,000 00
Joseph Hoehlein	Engineering assistant	840 per year	66 84	....	66 84
G. W. Nostrand	Engineering assistant	840 per year	21 00	....	21 00
J. C. Quinterro	Engineering assistant	840 per year	14 00	....	14 00
J. J. Raup	Engineering assistant	1,080 per year	548 71	....	548 71
F. B. Stoddard	Engineering assistant	1,080 per year	159 68	....	159 68
C. B. Tebo	Engineering assistant	1,080 per year	15 00	....	15 00
G. Terwilliger	Engineering assistant	1,080 per year	513 61	....	513 61
T. J. Torpy	Engineering assistant	840 per year	45 16	....	45 16
L. W. Donnelly	Inspector of engineering works	1,560 per year	16 77	....	16 77
W. H. H. Klinkhart	Inspector of engineering works	1,560 per year	1,402 74	....	1,402 74
H. Kramer	Inspector of engineering works	1,560 per year	1,021 70	....	1,021 70
T. M. Oliver	Inspector of engineering works	1,560 per year	12 58	....	12 58
A. M. Wait	Inspector of engineering works	1,560 per year	1,056 77	....	1,056 77
George Alexander	Boatman	3 00 per day	936 00	....	936 00
A. A. Boles	Boatman	3 00 per day	906 00	....	906 00
Louis Cicio	Boatman	3 00 per day	711 00	....	711 00
Ruby Cohen	Boatman	3 00 per day	867 00	....	867 00
Walter Cormany	Boatman	3 00 per day	210 00	....	210 00
Harold Folmsbee	Boatman	3 00 per day	27 00	....	27 00
L. Goodman	Boatman	3 00 per day	414 00	....	414 00
H. D. Horning	Boatman	3 00 per day	42 00	....	42 00
J. A. Jacobson	Boatman	3 00 per day	1,056 00	....	1,056 00
John Keenan	Boatman	3 00 per day	168 00	....	168 00
J. J. Kelly	Boatman	3 00 per day	1,086 00	....	1,086 00
E. W. Reilly	Boatman	3 00 per day	1,092 00	....	1,092 00
W. B. Rowland	Boatman	3 00 per day	177 00	....	177 00

Construction of Barge Canal Terminals — (Concluded)

Chapter 746 Laws of 1911, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
M. J. Sims	Boatman	$3 00 per day	$358 00	....	$358 00
A. B. Starin	Boatman	3 00 per day	48 00	....	48 00
J. W. Turner	Boatman	3 00 per day	795 00	....	795 00
Bernard Waage	Boatman	3 00 per day	558 00	....	558 00
Archie Bellrose	Laborer	2 50 per day	377 50	....	377 50
Sylvester Cogley	Laborer	2 50 per day	142 50	....	142 50
Walter Cormany	Laborer	2 50 per day	532 50	....	532 50
Thos. Dalton	Laborer	2 50 per day	47 50	....	47 50
Harry E. Dayton	Laborer	2 50 per day	35 00	....	35 00
Wm. De Forest	Laborer	2 50 per day	22 50	....	22 50
B. K. Ellis	Laborer	2 50 per day	30 00	....	30 00
P. F. Fitzgerald	Laborer	2 50 per day	755 00	....	755 00
Chas. Girard	Laborer	2 50 per day	907 50	....	907 50
James Hopkins	Laborer	2 50 per day	810 00	....	810 00
T. F. Madden	Laborer	2 50 per day	40 00	....	40 00
Harvey Martin	Laborer	2 50 per day	20 00	....	20 00
Geo. Reuling	Laborer	2 50 per day	845 00	....	845 00
Paul Sajta	Laborer	2 50 per day	22 50	....	22 50
J. R. Van Schoonhoven	Laborer	2 50 per day	....	$26 15	26 15
Gilbert Venter	Laborer	2 50 per day	913 50	....	913 50
Thos. Welch	Laborer	2 50 per day	42 50	....	42 50
H. J. Richardson	Photographer	1,680 per year	178 33	94 33	272 66
F. E. Davis	Chauffeur	1,650 per year	825 00	224 31	1,049 31
J. J. Finn	Chauffeur	1,650 per year	818 75	167 59	986 34
Harvey W. Nutter	Chauffeur	1,650 per year	....	97 05	97 05
			$111,084 49	$4,995 11	$116,079 60
		Incidental Expenses			
Instruments, tools and appliances				$28 24	
Office rent				4,461 66	
Fuel and light				248 83	
Stationery and printing				1,505 88	
Postage				110 18	
Telephone and telegraph				663 53	
Express and freight				46 45	
Miscellaneous				4,890 25	
					11,958 02
Total					$128,037 62

Bridge Designers, Engineers, Etc.

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
H. E. Brainard	Assistant engineer	$2,580 per year	$1,800 00	$69 58	$1,869 58
		Incidental Expenses			
Postage					100 00
Total					$1,969 58

High Street Bridge, Cohoes

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
H. W. Benedict	Assistant engineer	$2,208 per year	$92 00		$92 00
F. B. Hall	Assistant engineer	2,580 per year	50 17		50 17
L. E. Turpit	Junior assistant engineer	1,200 per year	16 67		16 67
Total			$158 84		$158 84

Sea-wall, Orient Point, L. I.

Chapter 428, Laws of 1918

NAME	Rank	Rate of compensation	Services	Travel	Total
Edward Anderberg	Senior assistant engineer	$3,300 per year	$18 33	$4 45	$22 78

Blue Line Surveys

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
W. C. Benedict	Assistant engineer	$2,340 per year	$228 34	$35 37	$263 71
H. W. Benedict	Assistant engineer	2,208 per year	184 00		184 00
G. A. Ensign	Assistant engineer	2,160 per year	605 80		605 80
Edwin Hilborn	Assistant engineer	2,580 per year	1,922 00	291 15	2,213 15
F. W. Harris	Assistant engineer	2,580 per year	696 61		696 61
R. L. Holt	Assistant engineer	2,208 per year	534 79		534 79
O. F. Lewis	Assistant engineer	2,340 per year	2,147 77	174 20	2,321 97
T. J. Loonie	Assistant engineer	1,980 per year	58 55		58 55
C. G. Ranney	Assistant engineer	2,580 per year	44 24	13 57	57 81
C. R. Waters	Assistant engineer	2,208 per year	729 87	228 31	958 18
A. F. Bayly	Junior assistant engineer	1,200 per year	394 97		394 97
F. C. Bedell	Junior assistant engineer	1,200 per year	141 29		141 29
J. H. Bovier	Junior assistant engineer	1,560 per year	709 67		709 67
C. D. Burrus	Junior assistant engineer	1,800 per year	750 00		750 00
A. E. Carrere	Junior assistant engineer	1,680 per year	515 14		515 14
J. J. Carroll	Junior assistant engineer	1,110 per year	750 75		750 75
A. H. Charchian	Junior assistant engineer	960 per year	78 06		78 06
L. E. Du Bois	Junior assistant engineer	1,200 per year	196 66		196 66
F. B. Faille	Junior assistant engineer	1,560 per year	130 00		130 00
L. E. Fields	Junior assistant engineer	1,200 per year	229 03		229 03
I. Finkelstein	Junior assistant engineer	1,200 per year	170 00		170 00
Geo. Fuller	Junior assistant engineer	1,800 per year	616 94		616 94
A. T. Giddings	Junior assistant engineer	1,800 per year	1,396 77	6 59	1,403 36
F. B. Gifford	Junior assistant engineer	1,200 per year	1,086 77		1,086 77
A. Gordon	Junior assistant engineer	1,680 per year	398 62		398 62
David Gordon	Junior assistant engineer	1,200 per year	304 30		304 30
H. W. Jewell	Junior assistant engineer	1,680 per year	18 07		18 07
T. R. Kerslake	Junior assistant engineer	1,320 per year	85 17		85 17
B. A. Krotinger	Junior assistant engineer	1,680 per year	1,172 23		1,172 23
Samuel Levine	Junior assistant engineer	1,680 per year	1,121 20	39 58	1,160 78
Wm. Mangan	Junior assistant engineer	1,320 per year	17 74		17 74
W. N. Niles	Junior assistant engineer	1,680 per year	510 32		510 32
Chas. Osborne	Junior assistant engineer	1,680 per year	617 81		617 81
L. C. Purdy	Junior assistant engineer	1,680 per year	176 13		176 13
H. L. Ramage	Junior assistant engineer	1,200 per year	274 62		274 62

Blue Line Surveys — (Continued)

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
H. S. Roberts	Junior assistant engineer	$1,320 per year	$706 77	....	$706 77
W. C. Strecker	Junior assistant engineer	1,200 per year	135 48	....	135 48
L. E. Turpit	Junior assistant engineer	1,320 per year	110 00	....	110 00
J. A. Waddell	Junior assistant engineer	1,560 per year	150 97	....	150 97
F. S. Belotti	Engineering assistant	1,080 per year	11 61	....	11 61
H. A. Dayton	Engineering assistant	840 per year	238 23	$2 56	240 79
R. B. Deutsch	Engineering assistant	840 per year	88 13	....	88 13
Louis Engel	Engineering assistant	840 per year	49 68	....	49 68
E. E. Fobes	Engineering assistant	840 per year	29 50	....	29 50
D. A. Gillette	Engineering assistant	840 per year	23 03	....	23 03
W. R. Glock	Engineering assistant	840 per year	281 13	....	281 13
H. H. Glosser	Engineering assistant	840 per year	276 30	....	276 39
A. H. Goodwin	Engineering assistant	840 per year	13 55	....	13 55
Edw. L. Horton	Engineering assistant	840 per year	6 77	....	6 77
S. Hurst	Engineering assistant	840 per year	11 29	....	11 29
H. E. MacEwen	Engineering assistant	840 per year	467 41	....	467 41
E. H. Mitchell	Engineering assistant	840 per year	349 99	....	349 99
W. E. Mullen	Engineering assistant	840 per year	287 90	....	287 90
J. C. Nolan	Engineering assistant	840 per year	300 32	....	300 32
G. W. Nostrand	Engineering assistant	840 per year	133 00	....	133 00
A. C. Pearce	Engineering assistant	840 per year	82 04	....	82 04
J. L. Quinlan	Engineering assistant	840 per year	23 33	....	23 33
J. J. Rapp	Engineering assistant	1,020 per year	427 75	....	427 75
T. K. Smith	Engineering assistant	840 per year	77 30	....	77 30
Edw. A. Terrell	Engineering assistant	840 per year	2 26	....	2 26
H. E. Thompson	Engineering assistant	840 per year	56 45	....	56 45
L. R. Wells	Engineering assistant	840 per year	119 07	....	119 07
Frank Yates	Engineering assistant	960 per year	625 00	....	625 00
A. A. Snell	Boatman	3 00 per day	93 00	....	93 00
Peter Barton	Laborer	2 50 per day	282 50	....	282 50
Carl Bremer	Laborer	2 50 per day	147 50	....	147 50
H. L. Crouse	Laborer	2 50 per day	155 00	....	155 00
Wm. DeForest	Laborer	2 50 per day	10 00	....	10 00
R. J. Evers	Laborer	2 50 per day	190 00	....	190 00
J. P. Hooley	Laborer	2 50 per day	25 00	....	25 00
R. H. Kay	Laborer	2 50 per day	32 50	....	32 50
W. B. Lounsbery	Laborer	2 50 per day	95 00	....	95 00
M. Metz	Laborer	2 50 per day	42 50	....	42 50
F. J. Norton	Laborer	2 50 per day	187 50	....	187 50
G. W. Olmstead	Laborer	2 50 per day	22 50	....	22 50
H. F. Sponable	Laborer	2 50 per day	137 50	....	137 50
F. A. Turney	Laborer	2 50 per day	225 00	....	225 00
A. W. Wright	Laborer	2 50 per day	267 50	....	267 50
			$25,311 58	$791 33	$26,102 91

Incidental Expenses

Livery	$578 25	
Fuel and light	69 73	
Postage	310 48	
Office rent	130 00	
Telegraph and telephone	67 35	
Miscellaneous	1,017 06	
		2,172 87
Total		$28,275 78

Location of Bridge between Crescent and Rexford

Chapter 742, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
H. E. Brainard	Assistant engineer	$2,580 per year	$215 00	....	$315 00
R. W. Benedict	Assistant engineer	2,340 per year	184 00	....	184 00
Total	....	....	$399 00	....	399 00

Schenectady–Scotia Bridge

Chapter 735, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
R. H. Davis	Consulting engineer	$750 per month	$3,750 00	$363 49	$4,113 49
C. H. Wood	Senior assistant engineer	2,820 per year	1,311 46	....	1,311 46
A. G. Hayden	Assistant engineer	2,580 per year	599 91	....	599 91
J. M. Prior	Assistant engineer	1,980 per year	383 23	....	383 23
C. E. Quimby	Assistant engineer	1,980 per year	463 07	....	463 07
H. S. Sparr	Assistant engineer	2,160 per year	627 10	....	627 10
L. C. West	Assistant engineer	2,208 per year	641 03	....	641 03
J. M. Angus	Junior assistant engineer	1,800 per year	198 39	....	198 39
J. F. Blaise	Junior assistant engineer	1,800 per year	297 58	....	297 58
L. Greenalch	Junior assistant engineer	1,800 per year	972 58	....	972 58
J. S. Heath	Junior assistant engineer	1,200 per year	248 39	....	248 39
W. J. Henry, Jr.	Junior assistant engineer	1,200 per year	160 22	....	160 22
J. S. Hyman	Junior assistant engineer	1,800 per year	479 03	....	479 03
Thos. McDonald	Junior assistant engineer	1,560 per year	205 48	....	205 48
Chas. Messina	Junior assistant engineer	1,560 per year	792 58	....	792 58
Total			$11,130 05	$363 49	$11,493 54

State Boundary Line

Chapter 181, Laws of 1917; chapter 151, Laws of 1918

NAME	Rank	Rate of compensation	Services	Travel	Total
H. F. Eagan	Junior assistant engineer	$1,440 per year	$360 00	$645 33	$1,005 33
Theron C. Hoyt	Laborer	2 50 per day	40 00	....	40 00
			$400 00	$645 33	$1,045 33
Incidental Expenses					
Livery				$163 00	
Miscellaneous				108 10	271 16
Total					$1,316 49

Delaware–Schoharie County Boundary Line

Chapter 559, Laws of 1918

NAME	Rank	Rate of compensation	Services	Travel	Total
R. S. Greenman	Senior assistant engineer	$3,300 per year	....	$25 90	$25 90
H. C. Kline	Assistant engineer	2,580 per year	$150 5	183 7	334 22
H. A. Dayton	Engineering assistant	840 per year	49 00	....	49 00
P. H. McMaster	Engineering assistant (provisional)	840 per year	53 67	....	53 67
H. H. Slocum	Engineering assistant (provisional)	840 per year	49 00	....	49 00
			$302 17	$209 6	$511 79
Incidental Expenses					
Livery				$102 00	
Postage				1	
Miscellaneous				10 4	112 65
Total					$624 43

Saratoga–Warren County Boundary Line

Chapter 561, Laws of 1918

NAME	Rank	Rate of compensation	Services	Travel	Total
R. S. Greenman	Senior assistant engineer	$3,300 per year		$27 90	$27 90
F. W. Harris	Assistant engineer	2,580 per year	$179 17	139 00	318 17
Dwight Douglass	Engineering assistant (provisional)	840 per year	16 33		16 33
J. L. Lochner, Jr	Engineering assistant (provisional)	840 per year	32 67		32 67
C. W. Wood	Engineering assistant (provisional)	840 per year	32 67		32 67
M. W. Sarr	Engineering assistant (provisional)	840 per year	32 67		32 67
			$293 51	$166 90	$460 41
Incidental Expenses					
Livery				$35 50	
Postage				48	
Miscellaneous				26 81	
					62 79
Total					$523 20

Hydrographic Survey

Chapter 181, Laws of 1917

In coöperation with the United Geological Survey

Cora Ames	$45 00
E. D. Burchard	174 92
Cameron & Hawn	48 00
Max Carson	252 00
W. E. Coe	45 00
C. C. Covert	720 62
Viola Davis	24 00
C. S. DeGolyer	33 50
Bessie Flanigan	12 00
O. W. Hartwell	58 55
Erastus Ingraham	60 00
W. A. James	11 81
Helen Kimmey	70 00
Leopold Voelpel & Co	15 00
James Lyons	27 00
George Marvin	15 00
J. Wendell Moulton	52 50
New York Telephone Company	61 45
D. L. Orcutt	36 00
Ralph Rose	30 00
Mrs. Volney Russell	24 00
William Seeley	48 00
N. A. Stevens	3 39
Total	$1,867 74

SUMMARY

The foregoing tables are summarized as follows:

Ordinary Repairs to Canals

1.	Erie canal, chapter 725, Laws of 1915	$1,812 00
2.	Erie canal, chapter 181, Laws of 1917	6,594 88
3.	Champlain canal, chapter 181, Laws of 1917	3,405 12

Construction of Barge Canal

4.	Head office account, chapter 147, Laws of 1903, and amendatory laws	193,755 10
5.	Erie canal, chapter 147, Laws of 1903, and amendatory laws	87,868 12
6.	Champlain canal, chapter 147, Laws of 1903, and amendatory laws	43,754 87

Construction of Barge Canal Terminals

7.	Barge canal terminals, chapter 746, Laws of 1911, and amendatory laws	128,037 62

Bridge Designers, Engineers, Etc.

8.	Bridge designers, engineers, etc., chapter 181, Laws of 1917	1,969 58

Special Work

9.	High street bridge, Cohoes, chapter 181, Laws of 1917	158 84
10.	Sea-wall, Orient Point, L. I., chapter 428, Laws of 1918	22 78

Special Surveys

11.	Blue line surveys, chapter 181, Laws of 1917	28,275 78
12.	Location of bridge between Crescent and Rexford, chapter 742, Laws of 1917.	399 00
13.	Schenectady-Scotia bridge, chapter 735, Laws of 1917	11,493 54
14.	State boundary line, chapter 181, Laws of 1917; chapter 151, Laws of 1918.	1,316 49
15.	Delaware–Schoharie county boundary line, chapter 559, Laws of 1918	624 45
16.	Saratoga–Warren county boundary line, chapter 561, Laws of 1918	523 20
17.	Hydrographic survey, chapter 181, Laws of 1917	1,867 74
	Total	$511,879 11

REPORT

OF THE

DIVISION ENGINEER

OF THE

MIDDLE DIVISION

For the Fiscal Year Ended June 30, 1918

MIDDLE DIVISION

STATE OF NEW YORK

DEPARTMENT OF STATE ENGINEER AND SURVEYOR

MIDDLE DIVISION

SYRACUSE, N. Y., *July* 1, 1918.

Hon. FRANK M. WILLIAMS, *State Engineer and Surveyor,*
Albany, N. Y.:

Sir.— I have the honor of submitting herewith my annual report as Division Engineer of the Middle Division of the New York State canals for the fiscal year ended June 30, 1918.

The engineering force on the Division the past year has been mainly engaged in supervising the work of completing and cleaning up the Barge canal contracts, in order to bring about the opening of the canal for public use on May 15 last. With the coöperation of the contractors, this was successfully done, so that on the regular date of opening the canal channel on this Division was sufficient in width and depth to accommodate traffic.

During the construction of the Barge canal on this Division a great many parcels of land lying adjacent to the new prism were needed for spoil-areas and were appropriated by the State for this purpose. After the completion of the canal prism many of these parcels were no longer needed for canal purposes and the original owners have sought to have the lands returned to them. Where satisfactory settlements have been made between these owners and the Superintendent of Public Works, the lands have been reconveyed, in many cases the State reserving the right to flood or overflow.

Numerous claims have arisen, due to the construction of dams built to maintain the flood levels at navigable stages. These claims are mainly for the alleged flooding of lands lying along the rivers. The engineers have been called upon to make surveys of these lands. Where surveys indicate that damages have occurred, maps have been prepared for permanent appropriation or perpetual right to flood. These surveys and maps are being made by construction corps during such time as supervision of construction will permit.

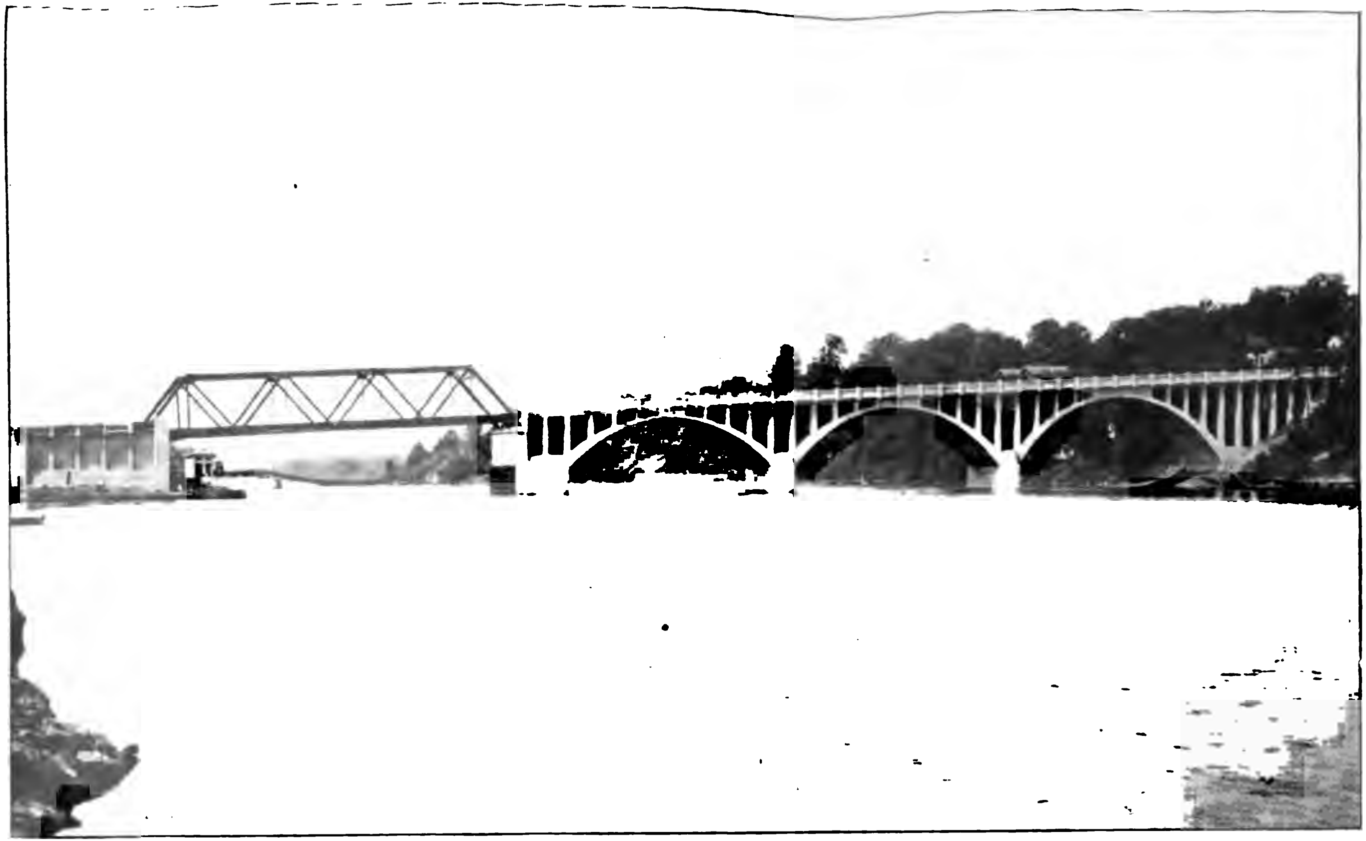
In addition to Barge canal work, the engineering force has taken care of the work authorized by special legislation; has made surveys and maps and prepared evidence for the Court of Claims; has spent much time in attendance at court; has prepared the necessary maps and data for the appropriation and release of lands; and has coöperated with the Department of Public Works in the location of buoys in the canalized lakes and rivers and the general care of the canals. A small force has also been kept on the work of locating and monumenting the blue line on those portions of the old Erie canal that it is proposed to abandon. The detailed report following will show what has been accomplished.

The dams and other structures on the Barge canal and feeders are mainly in good condition. Some repairs, however, are necessary. To prevent leakage and damage to the structures, the abutments to the curved dam at Oswego and to the dam across Owasco outlet at Auburn should be repaired.

The water-supply on this Division for the Barge canal, *i. e.,* the new channel, has been ample, but, although the rainfall during the season has been more than the average, the reservoirs to the south of the old canal have been severely taxed to maintain the levels of the old canal between Syracuse and Utica. While the level between Syracuse and New London has been maintained, it has been impossible to keep up that from Rome to Utica.

The dam across Chittenango creek at the head of the feeder is in bad condition. It is an old wooden structure with masonry abutments and bulkhead walls. It leaks badly not only through but underneath the spillway. It is liable to go out at any time. It should be replaced at the earliest possible date with a new concrete structure. Cowaselon dam was washed out several years ago. It should be rebuilt in concrete, in order to divert the water from the creek to the canal feeder.

Chapter 346, Laws of 1918, provides for the construction of a dive culvert at Rome for the purpose of maintaining the proper



Bridge across the Barge Canal and Oswego River at Minetto

View showing the three concrete arch spans built by the towns, the steel span, which crosses the canal channel and is convertible to a bascule, and the counterweight pit. Minetto lock appears in the distance.

water-level of the old canal between Rome and Utica. The necessary surveys have been made for the work and plans are being prepared at the Albany office. Before the work can be started, it will be necessary to make some repairs to the west guard-gate at Rome. In an attempt to draw that portion of the Rome level of the Barge canal between the guard-gate and lock No. 21, a leak developed underneath the southwest wing wall of the substructure of the guard-gate and it was of such magnitude that the immediate restoration of the level was necessary. It will be unsafe to close the gate and lower the level to the west of it, to any extent, without first making sure that the leak has been stopped.

On filling the old canal last spring, a break occurred under the northeast wing of Durhamville aqueduct over Oneida creek. The leak was detected before serious damage was done and repaired in time for the opening of navigation.

The reports of the Senior Assistant Engineers, which are appended, give in detail the condition and progress of the work on the Division.

Permit me to thank you and your representatives for your courtesy and assistance in carrying on the work of the Division and to commend the men under me for their support and their faithful and efficient service.

Respectfully submitted,
GUY MOULTON,
Division Engineer.

APPENDED REPORTS — MIDDLE DIVISION

SPECIAL APPROPRIATIONS

Continuing and Completing the Construction of a Bridge over the Black and Moose Rivers at Lyons Falls, Lewis County

(Chapters 699 and 728, Laws of 1915)

Contractor, Walter S. Rae.
Engineer in charge, David R. Lee.

Engineer's estimate	$59,385.00
Contractor's bid	54,911.00
Amount of final account	56,722.28

A supplementary agreement, approved by the Canal Board May 23, 1917, increased the cost by $6,630.60.

A supplementary agreement approved by the Canal Board September 18, 1917, further increased the cost by $177.80, making the contract price as modified by these agreements $61,719.40.

Improvement of Cowaselon Creek, in the County of Madison, by Dredging and Otherwise

(Chapter 781, Laws of 1917)

Contractor, Robert Provo.
Engineer in charge, David R. Lee.

Engineer's estimate	$12,000.00
Contractor's bid	10,500.00
Work done to date	1,030.00

Improvement of Limestone Creek in the Village of Fayetteville

(Chapter 751, Laws of 1917; chapter 339, Laws of 1918)

Surveys, studies and plans have been made for deepening, widening, straightening and otherwise improving Limestone creek in the village of Fayetteville, as provided by chapter 339, Laws of 1918, which amended chapter 751, Laws of 1917, and made a reappropriation for the work. On account of the increased cost of labor and materials, due to war conditions, the estimated cost was found to be larger than the appropriation and therefore the work has not been advertised.

Bridge over the Cayuga and Seneca Canal at Lake Street, Geneva

(Chapter 351, Laws of 1918)

The survey for this bridge has been made and the location map was plotted and sent to Albany.

Restoring the Black River Canal

(Chapter 564, Laws of 1918)

The restoring of the Black River canal to a navigable condition will probably be done by the Department of Public Works, as permitted by the Act and in accordance with the decision of that department.

The following surveys have been made and maps and reports prepared to accompany them:

For the construction of a concrete dockwall at Canandaigua lake harbor.

For the construction of approaches, for foot and vehicular traffic on the southerly side of the Erie canal, to the bridge over that canal in the village of Yorkville.

For the improvement of Glen, or Mill, creek in the county of Schuyler.

LAND ABANDONMENTS AND SURVEYS

(Chapter 299, Laws of 1916)

A survey has been made and maps prepared for the abandonment of the old Erie canal and all State lands adjacent thereto, between the east and west city lines of the city of Syracuse, all according to rules and regulations laid down by the Commissioners of the Land Office.

COURT OF CLAIMS

In addition to the work usually required by the Superintendent of Public Works in connection with ordinary repairs, a large amount of survey work and mapping has been made of property alleged to have been damaged by the State, reports made and data properly arranged for the Court of Claims and the Attorney-General. A large amount of time is spent by the engineers as witnesses for the State on local claims during the sessions of the Court.

BLUE LINE SURVEY

(Chapter 646, Laws of 1916; chapter 151, Laws of 1918)

These laws provide for surveys, field notes and manuscript maps affecting various canals and canal lands.

Three field parties were at work establishing and monumenting the State's right of way along the Erie and Oswego canals on the Middle Division. Field work started in August, 1917, and was stopped on November 8, 1917.

The following work has been done during the fiscal year ended June 30, 1918:

Erie Canal

Tracings on standard size sheets were completed from the east city line of Syracuse to the village of Warners.

The blue line and the red line were run out and monumented from Centerport road bridge to the Wayne county line, including all land appropriations made during the Nine-Million Improvement.

All blue line points are monumented with iron rods ¾ inch in diameter and 3 feet long. Reinforced concrete monuments 8 inches in diameter and 4½ feet long, with metal tablet imbedded in the top, showing station, offset distance and angle point, have been set to establish the red line.

Oswego Canal

The blue line and the red line were run out and monumented from the junction of the Erie and Oswego canals northward to the north city line of Syracuse and tracings on standard size sheets were completed.

The blue line and the red line were also run out and monumented on the north and south side-cuts and tracings on standard size sheets were completed.

ERIE CANAL, RESIDENCY NO. 5

Senior Assistant Engineer Edward J. Berry reports:

This residency extends from the east end of Oneida county to Oneida lake, a distance of 31.06 miles, and includes the former water-supply residency.

During the year, in addition to Barge canal construction, our engineers have worked in conjunction with forces of the Superintendent of Public Works' department, taking sections, setting buoys, etc., on maintenance work made necessary by the sand brought into the canal channel by Wood and Fish creeks.

Reports are given on contracts Nos. 42-A, 43, 44-A, 51, 81, 156 and 157, terminal contracts Nos. 15-D, 15-M, 16-P, 63 and 205, and those parts of Nos. 101 and 106 within this residency, also on Rome highways.

Contract No. 42-A

This contract is for completing the construction of the canal, together with all incidental work, between the Herkimer–Oneida county line and a point just east of Oriskany road, Sta. 5775. Length, 8.96 miles. It was awarded to Grant Smith & Company & Locher, being signed on February 24, 1913. Construction work began March 13, 1913. The engineer's preliminary estimate was $1,033,037.85, the contractor's bid, $1,014,671.83. The contract price as modified by alterations Nos. 1 and 2 is $1,239,045.03. Excess steel castings to the value of $220.00 have been authorized by the Canal Board. The value of work done during the year is $54,370, total done to date, $1,194,050. The amount paid on extra work orders during the year is $332.69, total to date, the same.

Robert E. Swinney, Assistant Engineer, is in charge.

An extra work order dated January 11, 1918, provides for repairs to pavement on Genesee street bridge. The final account, amounting to $332.69, was approved by the Canal Board January 23, 1918.

On June 30, 1917, 92 per cent of this contract was completed. During the past fiscal year the work of flattening the side slopes of the prism, placing riprap and cleaning up the site has been finished.

The contract was completed June 21, 1918. The final account is now being prepared.

Contract No. 43

This contract is for constructing the canal from a point just east of Oriskany road to about 1,500 feet west of Mud creek. Length, 10.32 miles. It was awarded to the M. A. Talbott Co., being signed on October 15, 1909. Construction work began about September 1, 1910. The engineer's preliminary estimate was $1,529,885.00, the contractor's bid, $1,320,560.00. The contract price as modified by alterations Nos. 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16 is $1,388,080.05. The work was accepted October 16, 1917, and the final account, amounting to $1,281,571.54, was approved by the Canal Board July 17, 1918. The amount paid on extra work orders during the year is $9,661, total to date, $24,977.

Lewis Bartlett, Assistant Engineer, is in charge.

An extra work order dated October 25, 1916, provided for repairs to the concrete paving below Nine-Mile creek spillway, which had become displaced in several places, and for placing additional riprap along the banks below the spillway where erosion had taken place. The final account, amounting to $8,474.66, was approved by the Canal Board March 20, 1918.

An extra work order dated July 23, 1917, provided for building a wooden bridge across the ditch opposite Sta. 5791 to furnish access to certain farm lands which would be otherwise isolated. The final account, amounting to $157.87, was approved by the Canal Board February 13, 1918.

An extra work order dated September 19, 1917, provided for the placing of stone protection at the culvert near Sta. 5895. The final account, amounting to $265.56, was approved by the Canal Board January 23, 1918.

An extra work order dated September 21, 1917, provided for the placing of stone protection on the west dike at Nine-Mile creek entrance and also at three other stream entrances in order to protect the banks, and also for removing a large amount of debris which had come down the river during the spring freshet and lodged at the Nine-Mile creek spillway. The final account, amounting to $762.85, was approved by the Canal Board January 9, 1918.

The contract work was finished in September, 1917.

When the repairs at the Nine-Mile creek spillway were undertaken it was found that more work was necessary than had been expected, as the supporting earth had been entirely washed away below the slabs of concrete adjacent to the spillway. These slabs were removed and the space below filled with material carefully puddled. Before relaying the slabs, a shelf was cut in the side of the spillway. Holes were drilled in the spillway and in these steel rods were inserted. These rods ran also into the concrete slabs, thus tying them to the spillway. The concrete removed was used as additional bank protection.

The work at the culvert near Sta. 589·5 became necessary when the embankment immediately over the culvert washed away. In order to prevent further erosion this stone protection was placed.

Contract No. 81

This contract is for constructing a junction lock at Rome. It was awarded to Chesley, Earl & Heimbach, Inc., being signed on October 17, 1916. Construction work began November 4, 1916. The engineer's preliminary estimate was $61,236.40, the contractor's bid, $53,998.90. The contract price as modified by alteration No. 1 is $54,685.90. The value of work done during the year is $3,527. The work was accepted January 16, 1918, and the final account, amounting to $49,206.89, was approved by the Canal Board January 23, 1918. The amount paid on extra work orders during the year is $247.21, total to date, $1,387.21.

Lewis Bartlett, Assistant Engineer, was in charge.

An extra work order dated February 23, 1917, provides for furnishing labor and materials necessary to construct patterns for hand-wheels, main supports, bearings and cup wheels, also for shipping them to the Division Superintendent of Public Works. Patterns for these parts were to have been loaned to the contractor by the Superintendent of Public Works but were not available when needed. The final account, amounting to $68.71, was approved by the Canal Board September 5, 1917.

An extra work order dated March 22, 1917, provides for transporting steel sheet-piling from the site of contract No. 44 to the junction lock at Rome, driving it for sheeting, and returning it when no longer required. The final account, amounting to $1,263.50, was approved by the Canal Board December 19, 1917.

On July 1, 1917, the contractor started building the lock-gates and by July 15, 1917, these gates were finished and placed in position, the tumble-gate machinery installed, embankment made and the lock made ready for operation when water was let into the Erie canal by the Department of Public Works on July 15, 1917.

From July 15 to August 25, 1917, a small force was at work pulling steel sheet-piling, grading, placing wash wall, etc.

The contract was finished during the fiscal year ended June 30, 1918.

Contract No. 157

This contract is for constructing a dam across the old Erie canal at Rome. It was awarded to Thomas Bowen, being signed on April 20, 1917. Construction work began April 24, 1917. The engineer's preliminary estimate was $4,924.00, the contractor's bid, $5,912.00. The contract price as modified by alteration No. 1 is $6,247.50. Excess forming embankment to the value of $44.00 has been authorized by the Canal Board. The value of work done during the year is $5,390. The work was accepted October 31, 1917, and the final account, amounting to $5,890.22, was approved by the Canal Board February 5, 1918.

D. J. Levinson, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board April 25, 1917, changes the location of the dam and increases the length of the tow-path wall. It increases the contract price by $335.50.

This dam is built across the old Erie canal to act as a spillway and to maintain the level above the north junction lock. The contract was completed during the fiscal year.

Contract No. 44-A

This contract is for completing the construction of the canal prism near the junction lock at New London. It was awarded to Scott Brothers, being signed on October 10, 1916. Construction work began about November 1, 1916. The engineer's preliminary estimate was $57,050.00, the contractor's bid, $52,486.00. The value of work done during the year is $9,830, total done to date, $45,970.

Foster B. Crocker, Assistant Engineer, is in charge.

The State dipper-dredge *Pathfinder* was rented to complete the removal of some hard material that the hydraulic dredge had been unable to remove. This machine completed removing the material from the canal prism, but had not cleaned up the entrance to the junction lock when it was taken back by the Department of Public Works. As the drag-line machine could not excavate this material, the work has not yet been completed. The drag-line machine worked trimming slopes until December 15, 1917, after which it was dismantled and shipped away.

Contract No. 156

This contract is for constructing a highway bridge across Wood creek about one mile east of Sylvan Beach. It was awarded to Chesley, Earl & Heimbach, Inc., being signed on August 28, 1917. Construction work began October 17, 1917. The engineer's preliminary estimate was $7,788.00, the contractor's bid, $9,813.00. The contract price as modified by alteration No. 1 is $10,113.00. The value of work done to date is $2,510.

Foster B. Crocker, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board February 13, 1918, substitutes round piles for wooden sheet-piling in foundation of bridge. It increases the contract price by $300.00.

The contractor began work excavating and driving piles on October 17, 1917, and continued work until weather conditions became so severe that he was forced to shut down. High water prevented his resuming work again until June 14, 1918. The foundation piles are all driven, footings for both abutments are ready to pour, bridge steel is delivered and concrete plant is being assembled.

Contract No. 51

This contract is for constructing a canal feeder between Trenton Falls and Nine-Mile creek, together with a gate-house, culverts and all other work appertaining to the contract. Length, 5.75 miles. It was awarded to George T. Cunningham, being signed on December 23, 1910. It was assigned to the Alto Construction Company and this assignment was approved by the Superintendent of Public Works August 8, 1911. Construction work began February 27, 1911. The engineer's preliminary estimate was $424,710.00, the contractor's bid, $389,842.50. The contract price as modified by alterations Nos. 1, 2, 3, 4, 5, 6 and 7 is $414,869.85. The value of work done during the year is $6,827, total done to date, $360,607. The work was accepted October 16, 1917, and the final account, amounting to $360,607.46, was approved by the Canal Board December 4, 1917. The amount paid on extra work orders during the year is $2,457, total to date, $14,474.

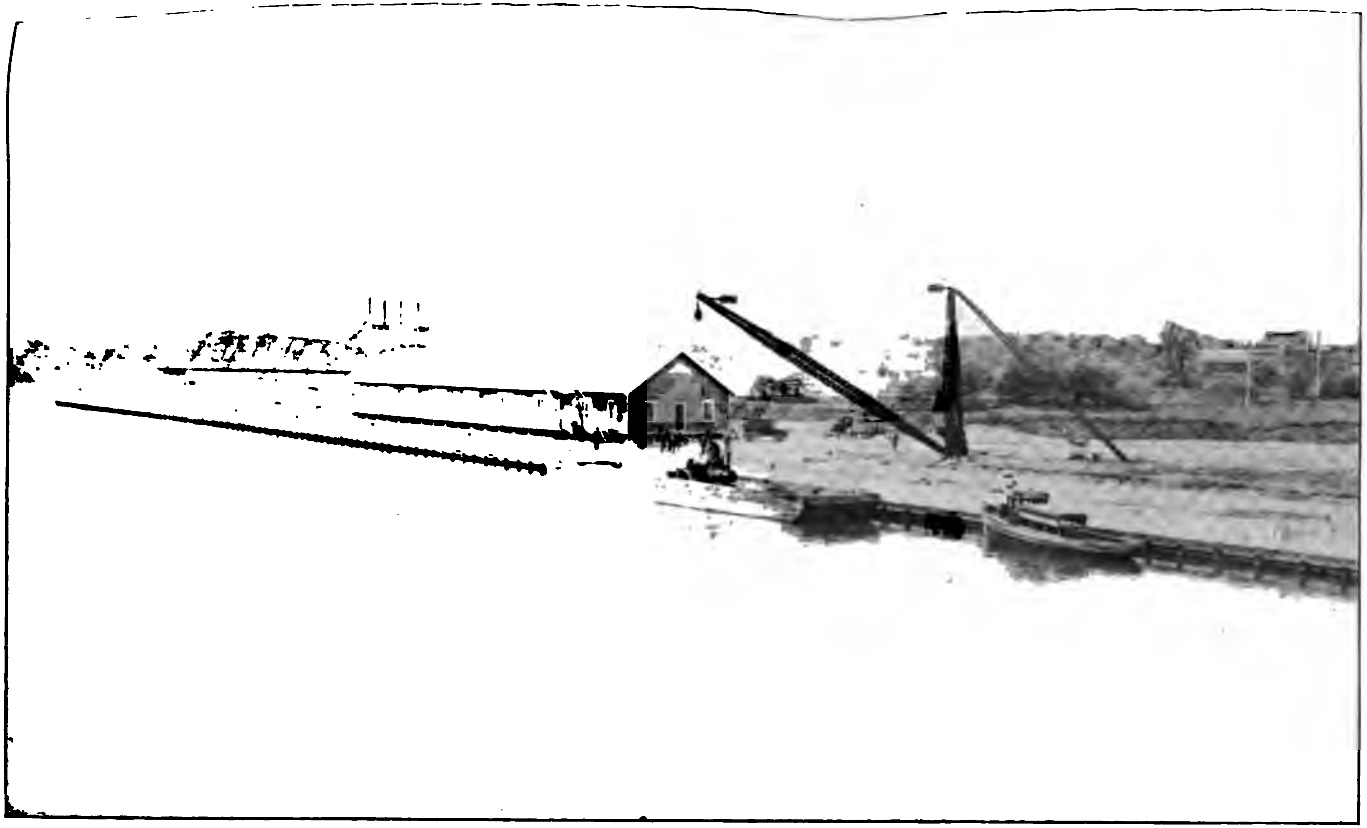
John L. Bush and Geo. H. Briggs, Assistant Engineers, have been in charge.

An extra work order dated July 26, 1917, provides for paving numerous ditch and stream entrances with stone laid in mortar, for repairing certain cobblestone gutters at highway crossings and for constructing vitrified pipe culverts. The final account, amounting to $2,457.03, was approved by the Canal Board August 21, 1917.

The placing of third-class riprap on the banks of the feeder, as provided by alteration No. 7, was finished by July 27, 1917. Some material that slid into the feeder prism was reëxcavated and the banks were widened in places where seepage appeared. Some miscellaneous work and the cleaning up of the site of the contract brought the work to completion by October 5, 1917.

Terminal Contract No. 205

This contract is for constructing temporary terminal warehouses at Utica and Rome. It was awarded to William R. Kimmey, being signed on March 14, 1917. Construction work began April 21, 1917. The engineer's preliminary estimate was $2,320.00, the contractor's bid, $2,100.00. The contract price



Barge Canal Terminal at Rome

At six of the canal terminals 12-ton steel derricks were installed. The view shows one of these derricks unloading a steam portable engine.

as modified by alteration No. 1 is $13,906.75. The value of work done during the year is $691. The work was accepted October 23, 1917, and the final account, amounting to $13,520.55, was approved by the Canal Board January 23, 1918. The amount paid on extra work orders during the year is $144.88, total to date, the same.

Robert E. Swinney and Lewis Bartlett, Assistant Engineers, were in charge.

An extra work order dated May 8, 1917, provides for grading a roadway in the rear of the terminal warehouse at Utica. The final account, amounting to $64.16, was approved by the Canal Board July 11, 1917.

An extra work order dated July 9, 1917, provides for placing galvanized wire screens on the doors and windows of the warehouses to prevent burglary. The final account, amounting to $80.72 ($40.91 at Rome and $39.81 at Utica), was approved by the Canal Board October 23, 1917.

This contract was 95 per cent completed on June 30, 1917. During July and August, 1917, these warehouses were painted and wired, and also the placing of wire screens on the doors and windows was completed. The contract was finished in August, 1917.

Terminal Contract No. 15-D

This contract is for constructing a drainage system at Utica. It was awarded to Mohawk Dredge and Dock Company, Inc., being signed on August 13, 1917. Construction work began August 31, 1917. The engineer's preliminary estimate was $8,200.00, the contractor's bid, $8,989.00. The work was accepted December 4, 1917, and the final account, amounting to $8,863.39, was approved by the Canal Board January 9, 1918. The amount paid on extra work orders is $412.70.

An extra work order dated September 24, 1917, provides for the installation of an electric transmission line from the Utica Gas & Electric Co.'s line to the Utica warehouse. The final account, amounting to $350.00, was approved by the Canal Board October 23, 1917.

An extra work order dated September 29, 1917, provides for the substitution of 190 lin. ft. of 8-in. drain pipe in place of 4-in. pipe called for by the plans. The final account, amounting to $62.70, was approved by the Canal Board October 23, 1917.

The contract work was finished on November 20, 1917.

Terminal Contract No. 15-M

This contract is for electrical equipment and machinery for operating and lighting the Utica terminal. It was awarded to Lupfer and Remick, being signed on October 31, 1917. Construction work began April 26, 1918. The engineer's preliminary estimate was $30,681.20, the contractor's bid, $36,967.50. The value of work done to date is $7,140.

Concrete platforms for cabinets have been built, one valve and one gate machine delivered and partly set up and all motors, lamps, conduits and cables have been delivered.

On June 30, 1918, this contract is 19 per cent completed.

Terminal Contract No. 63

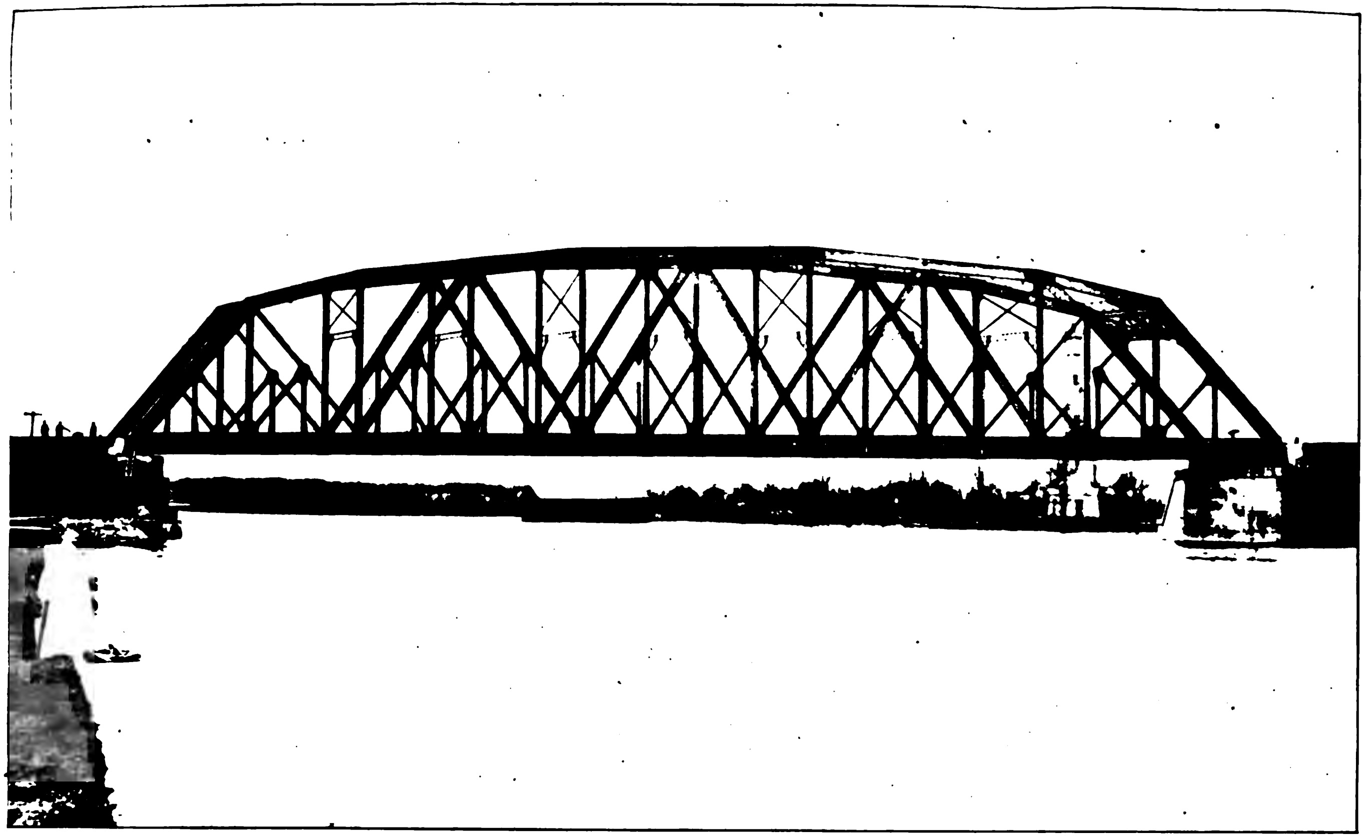
This contract is for constructing railroad tracks and brick pavement on the Barge canal terminal at Utica. It was awarded to Harry W. Roberts & Co., being signed on April 19, 1918. The engineer's preliminary estimate was $9,590.00, the contractor's bid, $10,164.00.

Lewis Bartlett, Assistant Engineer, is in charge.

An extra work order dated May 8, 1918, provides for making certain alterations to the freight-shed, so as to provide a field office for the engineers at the site.

The only feasible method of making track connection between this terminal and the New York Central railroad is by means of a grade crossing in North Genesee street at its intersection with Wurz avenue. The city administration is very strongly opposed to such a grade crossing. This condition makes it advisable to postpone the construction of tracks.

The only work done up to July 1, 1918, has been the hauling of brick to the site of the contract.



New York Central Railroad Bridge (R., W. & O. Branch) over Oneida River at Brewerton
This structure replaces a bridge which had fixed spans and a draw. Beyond the bridge may be seen the Brewerton lighthouse — one of three Barge canal lighthouses for marking courses on Oneida Lake.

Terminal Contract No. 106

This contract is for furnishing fourteen two-ton steam tractor cranes for Barge canal terminals. The following report relates to the work at Utica. The contract was awarded to the John F. Byers Machine Co., being signed on February 14, 1918. The engineer's preliminary estimate was $5,250.00 per crane, the contractor's bid, $5,265.00 per crane. The contract price as modified by alteration No. 1 is $5,515.00 per crane. The value of work done at Utica to date is $5,210.

Alteration No. 1, approved by the Canal Board March 27, 1918, provides for housing the fourteen cranes on this contract. It increases the contract price by $250.00 per crane.

The crane for the Utica terminal has been delivered.

Terminal Contract No. 16-P

This contract is for paving the terminal area at Rome. It was awarded to E. Brown Baker, being signed on June 4, 1917. Construction work began June 6, 1917. The engineer's preliminary estimate was $3,300.00, the contractor's bid, $3,909.50. Excess quantities to the value of $430 have been authorized by the Canal Board. The value of work done during the year is $4,170, total done to date, the same. On June 19, 1918, the Canal Board accepted the work and approved the final account, which amounted to $4,169.50.

Lewis Bartlett, Assistant Engineer, was in charge.

The contract work was finished in May, 1918.

Terminal Contract No. 101

This contract is for furnishing and installing steel stiff-leg derricks on terminal sites at Albany, Whitehall, Little Falls, Rome, Lockport and Tonawanda. The following report relates to work at Rome. The contract was awarded to E. Brown Baker, being signed on December 18, 1916. On February 21, 1917, it was assigned to the Mohawk Dredge & Dock Co., Inc., and this assignment was approved by the Superintendent of Public Works March 26, 1917. The engineer's preliminary estimate for the derrick at Rome was $3,885.50, the contractor's bid, $5,684.00.

Excess metal (Rome) to the value of $1,330.00 has been authorized by the Canal Board. The value of work done at Rome during the year is $6,720, total done to date, the same.

Lewis Bartlett, Assistant Engineer, is in charge.

An extra work order dated December 11, 1917, provides for furnishing and installing motors and the necessary connecting gears at Rome and Little Falls.

The contract work and the work under the extra work order have been finished and the final estimate is being prepared.

Highways at Rome

This contract is for the construction of two connecting highways, Muck road to James street and Whitesboro street to Mill street, in the city of Rome. Length, one mile. It was awarded to Harry A. Schaupp of Guilderland, N. Y., being signed on January 17, 1916. Work was begun May 21, 1916. The engineer's preliminary estimate was $28,634.55, the contractor's bid, $32,111.15. The final account, amounting to $31,730.24, was approved by the Canal Board March 6, 1918.

Henry J. O'Neill and D. J. Levinson, Assistant Engineers, have been in charge.

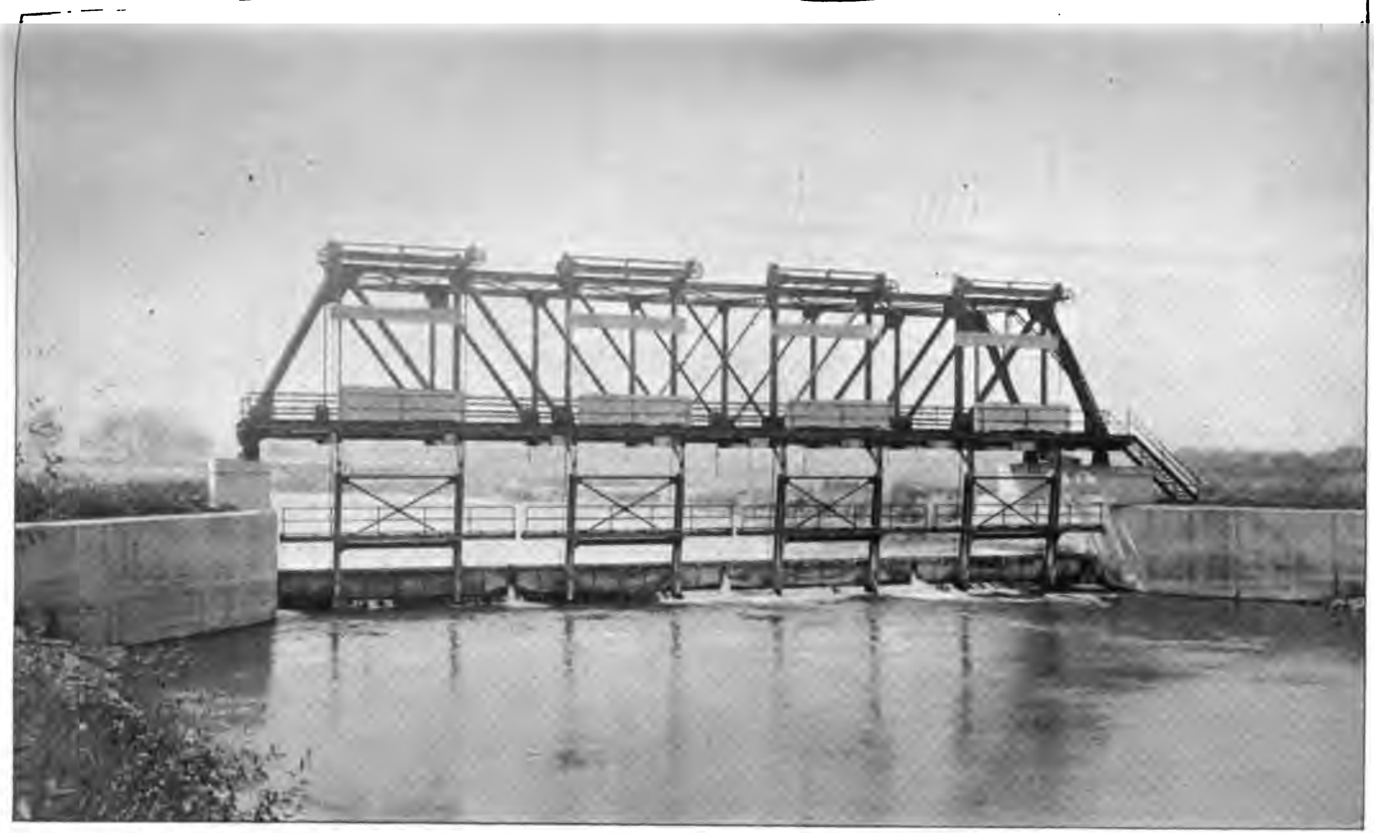
It was found that the earth at the site of the highway between James street and Muck road was very porous and spongy and in order to secure a firm base for the highway it was necessary to use a much larger quantity of gravel than had been expected.

The contract was completed during the fiscal year.

ERIE CANAL, RESIDENCIES NOS. 6 AND 7

Senior Assistant Engineer Edward J. Berry reports:

Residency No. 6 extends from deep water at the western end of Oneida lake to Baldwinsville, a distance of about 23.4 miles, and includes also the work under contract No. 132, which pertains to aids to navigation on Oneida lake. Residency No. 7 extends from Baldwinsville to the Wayne county line, a distance of about 32.7 miles. This report covers the work on the following con-



MOVABLE DAM OF BRIDGE TYPE IN THE CLYDE RIVER AT MAYS POINT

This structure is similar in type to the Mohawk river dams, but is smaller. Unlike the large dams it is operated by hand, the gates being counterweighted for this purpose.

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tracts: Contracts Nos. 46-A, 46-B, 132, 165 and 184, parts of Nos. 153, 172 and 173, and terminal contracts Nos. 20, 28, 29 and 213 and part of No. 106.

Contract No. 132

This contract is for constructing lighthouses, range towers, beacons, etc., and for furnishing and installing buoys and lighting equipments for aids to navigation on Oneida and Onondaga lakes. It was awarded to Lupfer & Remick, being signed on November 3, 1916. The engineer's preliminary estimate was $63,937.00, the contractor's bid, $70,330.20. The contract price as modified by alteration No. 1 is $70,267.80. Excess quantities to the value of $2,567.50 have been authorized by the Canal Board. The value of work done during the year is $29,399. On April 10, 1918, the Canal Board accepted the work and approved the final account, which amounted to $69,669.29.

W. J. Durkan, Assistant Engineer, was in charge.

Alteration No. 1, approved by the Canal Board December 4, 1917, eliminates pile-cluster lights at the Syracuse terminal entrance and round cable in connection therewith and the steel cabinet lighting equipment for the first range at Constantia. It decreases the contract price by $62.40.

The work done during the year has consisted principally in pouring concrete for the upper portion of the tower on Frenchman's island and for the whole tower at Sylvan Beach except the foundation, the completion of these lighthouses, together with the one at Brewerton, the erection of the tower at Syracuse, the installation of electrical equipment on this tower and on the N. Y. Central bridge at Syracuse, the adjustment of lights and painting. The lights were all in operation August 31, 1917, except those on the Syracuse and Sylvan Beach towers. The contract was practically finished by November 16, 1917.

Contract No. 184

This contract is for excavating a channel under the N. Y. C. R. R. bridge at Brewerton. It was awarded to Mohawk Dredge and Dock Co., Inc., being signed on April 12, 1918. The engineer's preliminary estimate was $7,200.00, the contractor's bid,

$9,480.00. The value of work done during the year is $9,400, total done to date, $9,400.

H. H. Brown, Assistant Engineer, is in charge.

The excavation has been made with a dipper-dredge and a derrick-boat equipped with clam-shell and drag-line buckets. The derrick-boat was also equipped with drills. The plant began to arrive on April 26, and the contract work was finished on June 21, 1918. The final account has been prepared and forwarded to Albany.

Contract No. 153

The portion of this contract affecting this residency provides for furnishing and delivering oil-burning lanterns for buoy, stake and bridge lights on the Oneida and Seneca rivers. It was awarded to R. B. Wing & Son, being signed on February 28, 1917. The engineer's preliminary estimate was $12.00 per lantern, the contractor's bid, $12.54 per lantern. On October 3, 1917, the Canal Board accepted the contract and approved the final account, the amount being the same as the contractor's bid.

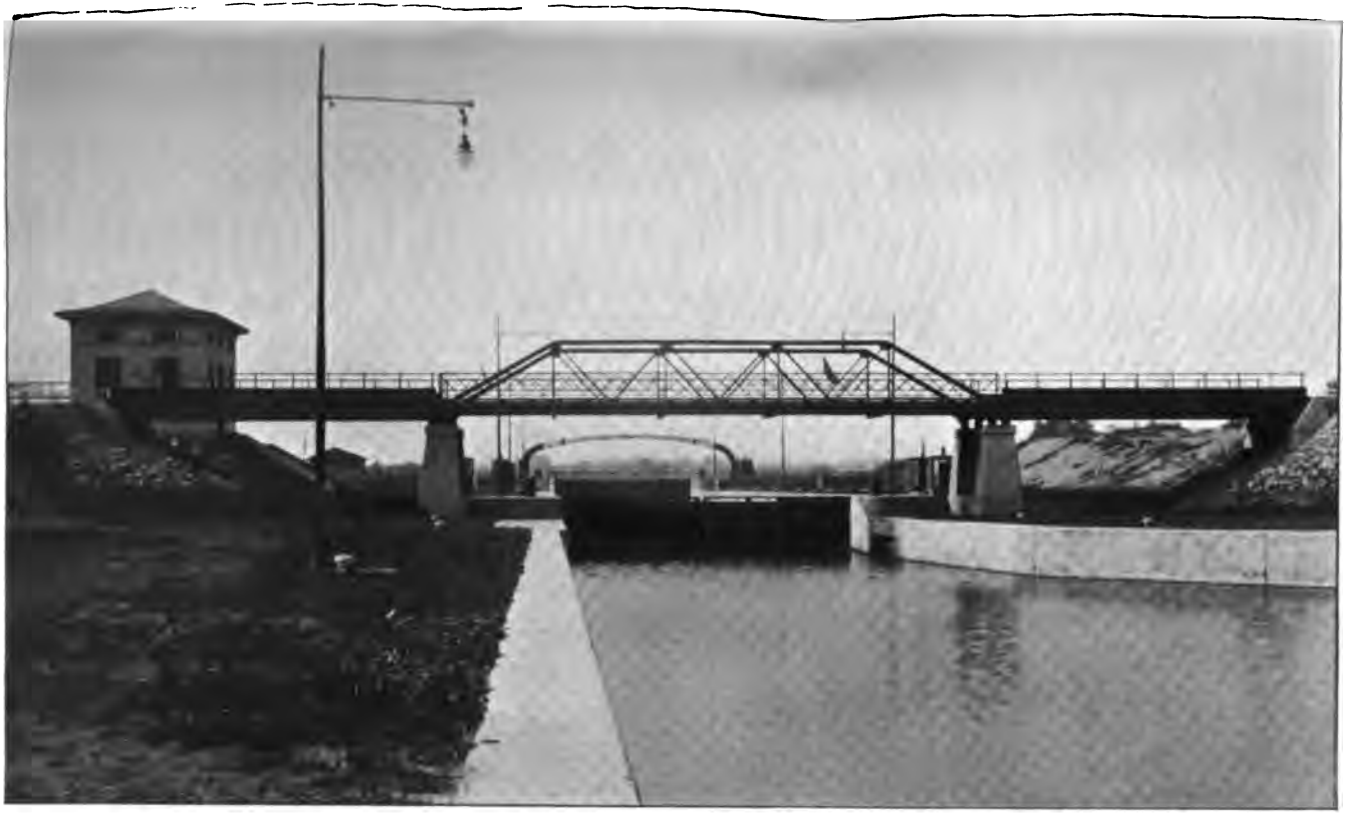
Ninety-three lanterns were delivered for use on residency No. 6 at a cost of $1,166.22.

Contract No. 172

The portion of this contract affecting this residency provides for furnishing and delivering at Baldwinsville 47 red barrel buoys, 48 black barrel buoys, 10 red lamp-posts and 16 black lamp-posts, for aids to navigation on the Seneca river. The contract was awarded to Lupfer & Remick, being signed on March 15, 1918. The engineer's preliminary estimate for the whole contract was $14,853.00, the contractor's bid, $13,063.20. The contract price as modified by alteration No. 1 is $12,921.45. The value of work done to date on this residency is $4,720. The amount paid on extra work orders to date is $906.50, of which amount $465.50 applies to work on this residency.

N. R. McLoud, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board May 23, 1918, eliminates the requirements for galvanizing the hoops on the barrel buoys. It decreases the contract price by $141.75.



Lock No. 25, at Mays Point

A unique feature of this lock is the steel arch across the upper end. This arch carries the cables used in the electric operating installation.

An extra work order dated April 4, 1918, provides for making concrete anchors for the buoys. The final account, amounting to $906.50 ($465.50 for this residency), was approved by the Canal Board June 27, 1918.

Owing to the necessity for marking the channel at the opening of navigation on May 15, 1918, these buoys were placed along the channel in an unfinished condition, 75 per cent of their contract price being allowed in the monthly estimates. The lampposts which were to have been delivered at Baldwinsville were shipped to Clyde.

Contract No. 173

The portion of this contract affecting this residency provides for furnishing and delivering at Baldwinsville 245 oil-burning lanterns for buoy, stake and bridge lights on the Seneca river. It was awarded to R. B. Wing & Son, being signed on February 9, 1918. The engineer's preliminary estimate was $19.00 per lantern, or $4,655.00 for this residency, the contractor's bid, $17.92 per lantern, or $4,390.40 for this residency. On June 26, 1918, the Canal Board accepted the work and approved the final account, the amount being the same as the contractor's bid.

These lanterns were duly delivered and accepted.

Contract No. 46-A

This contract is for completing the construction of the canal from Fox Ridge to Montezuma aqueduct. Length, 4.49 miles. It was awarded to James Stewart & Co., Inc., being signed on September 2, 1914. The engineer's preliminary estimate was $333,941.50, the contractor's bid, $196,133.50. The value of work done during the year is $22,689, total done to date, $180,439. The work was accepted September 5, 1917, and the final account, amounting to $180,438.93, was approved by the Canal Board January 9, 1918. The total amount paid to date on extra work orders is $899.38, all prior to the present year.

J. G. Palmer, Assistant Engineer, was in charge.

An extra work order dated July 26, 1917, provides for driving clusters of fender piles at three railroad bridges, the R. S. & E., the N. Y. Central and the West Shore, to protect boats from coming in contact with certain steel sheet-piling, which had been used for coffer-dams and was left in place. This work was not done under this contract, but has been incorporated in contract No. 165.

Prism excavation just north of the Toll road bridge was in progress at the beginning of the year, a dipper-dredge and a hydraulic dredge being used. The dipper-dredge loosened the hard material and cast it over. This dredge was removed from the contract on July 23, 1917. The hydraulic dredge removed the loose material and deposited it in the spoil-bank. This dredge finished the excavation to Toll road bridge on July 28, and was then moved to a point north of the West Shore bridge, where on July 30 and 31 it excavated a bar which had formed at that point. It was then moved to a point north of Fox Ridge and began excavating at Sta. 5223 on August 2. In the evening of that day the levees broke and operations were suspended.

A diving outfit was used during July in removing boulders at the N. Y. Central bridge.

The placing of riprap at the West Shore railroad bridge was finished by July 13, and at the R. S. & E. trolley bridge by August 3.

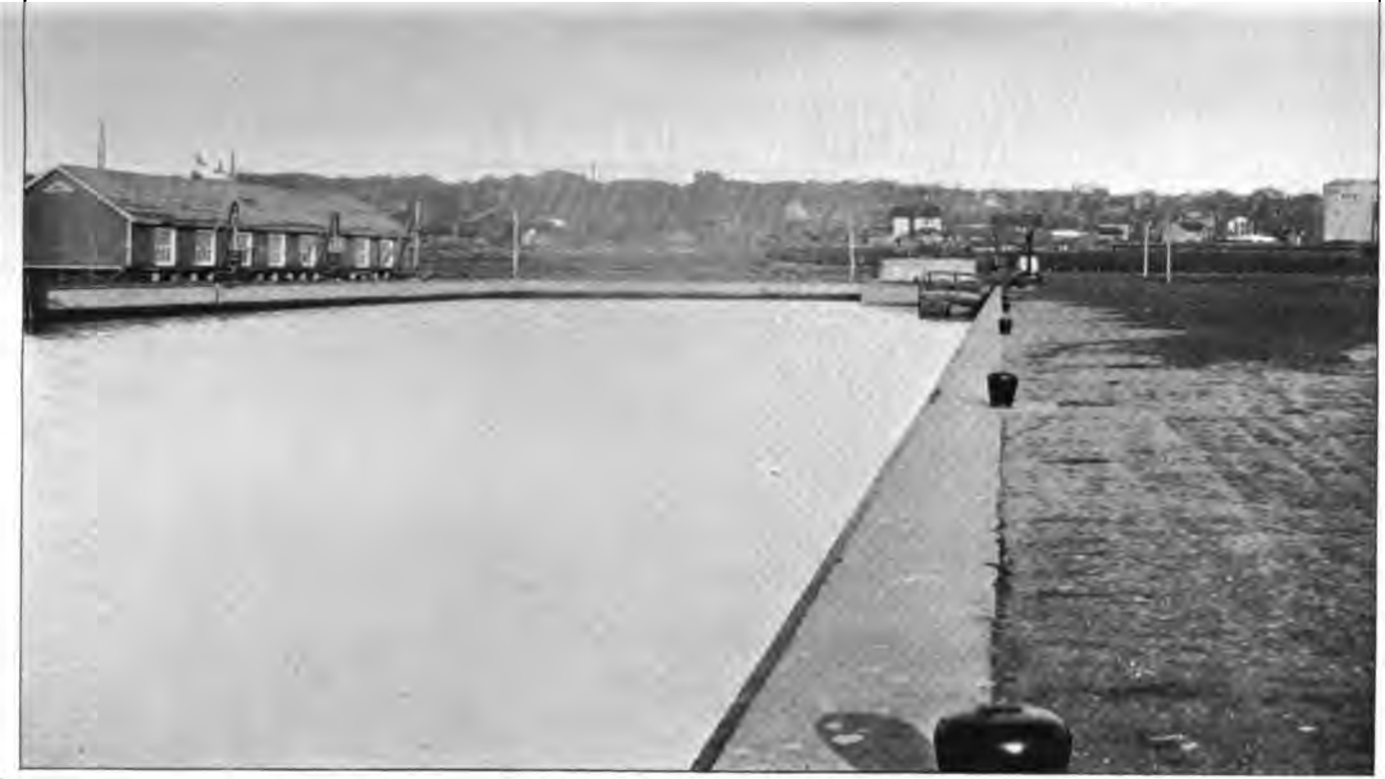
The contract was completed and the plant entirely removed by August 3, 1917.

Contract No. 46-B

This contract is for the construction of a lock, dam, etc., at May's Point. Length, 0.66 mile. It was awarded to Scott Bros., being signed on February 25, 1916. The engineer's preliminary estimate was $314,660.72, the contractor's bid, $277,348.22. The contract price as modified by alterations Nos. 1 and 2 is $293,676.97. Excess quantities to the value of $3,330.00 have been authorized by the Canal Board. The value of work done during the year is $114,570, total done to date, $258,760.

J. G. Palmer, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board July 25, 1917, provides for completing the installation of electrical and mechanical equipment at lock No. 25, May's Point. It increases the contract price by $13,343.65.



BARGE CANAL TERMINAL AT SYRACUSE

Syracuse harbor, at the head of a spur extending from the main canal through a stretch of Seneca river and Onondaga lake, consists of two piers, three slips and adjacent dockwalls. This view shows the south pier, slip and dockwall.

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Alteration No. 2, approved by the Canal Board November 9, 1917, modifies plan for north approach of bridge over lock No. 25, and provides for furnishing and erecting a steel overhead structure for carrying cable across the upper end of lock. It increases the contract price by $2,985.10.

The contract is for the completion of work embraced in old contract No. 46, and includes the masonry and steelwork of the lock and the walls to connect with the approach walls built under contract No. 46; also the superstructure of a movable dam in the Seneca river, a highway bridge with approaches over the lock, the cleaning of the prism, the removal of coffer-dams, etc.

On June 30, 1917, this contract was 52 per cent completed. During the past fiscal year the lock and its approaches, together with the highway and bridge, were completed, except the work of placing top soil on embankments and seeding them. The movable dam was completed, except the forming of a small amount of embankment at the south approach and the placing of chains and counterweights to be connected to the lower gates and wickets. Also a small amount of riprap is yet to be placed on the south embankment.

The electrical equipment at the lock is in working order and boats are passing this lock without interruption.

Contract No. 165

This contract is for removing the Montezuma aqueduct and completing the canal prism excavation from Sta. 5439 + 48, just east of the aqueduct, to Sta. 5550, near May's Point, and for redredging the canal prism between Stas. 5165 and 5202 + 62.89, near Fox Ridge. It was awarded to Mohawk Dredge & Dock Co., Inc., being signed on November 23, 1917. Construction work began in December, 1917. The engineer's preliminary estimate was $84,530.00, the contractor's bid, $160,943.00. The value of work done to date is $116,680.

J. G. Palmer, Assistant Engineer, is in charge.

An extra work order dated February 11, 1918, provides that the fender piles at the railroad bridges on this contract be bolted, peeled and painted. This extra work is to be paid for at the actual cost of labor and materials plus 15 per cent.

The prism excavation is completed except cleaning up between Stas. 5463 and 5479, and between Stas. 5165 and 5202 + 63, and a small amount where the foundations of the aqueduct have not been removed. Nineteen spans of aqueduct masonry and trunk and 16 spans of foundation timbers have been removed.

The foundation piles between piers Nos. 9 and 23 have been pulled. There has been no delay to navigation during the fiscal year on this section.

Terminal Contract No. 28 — *Cleveland*

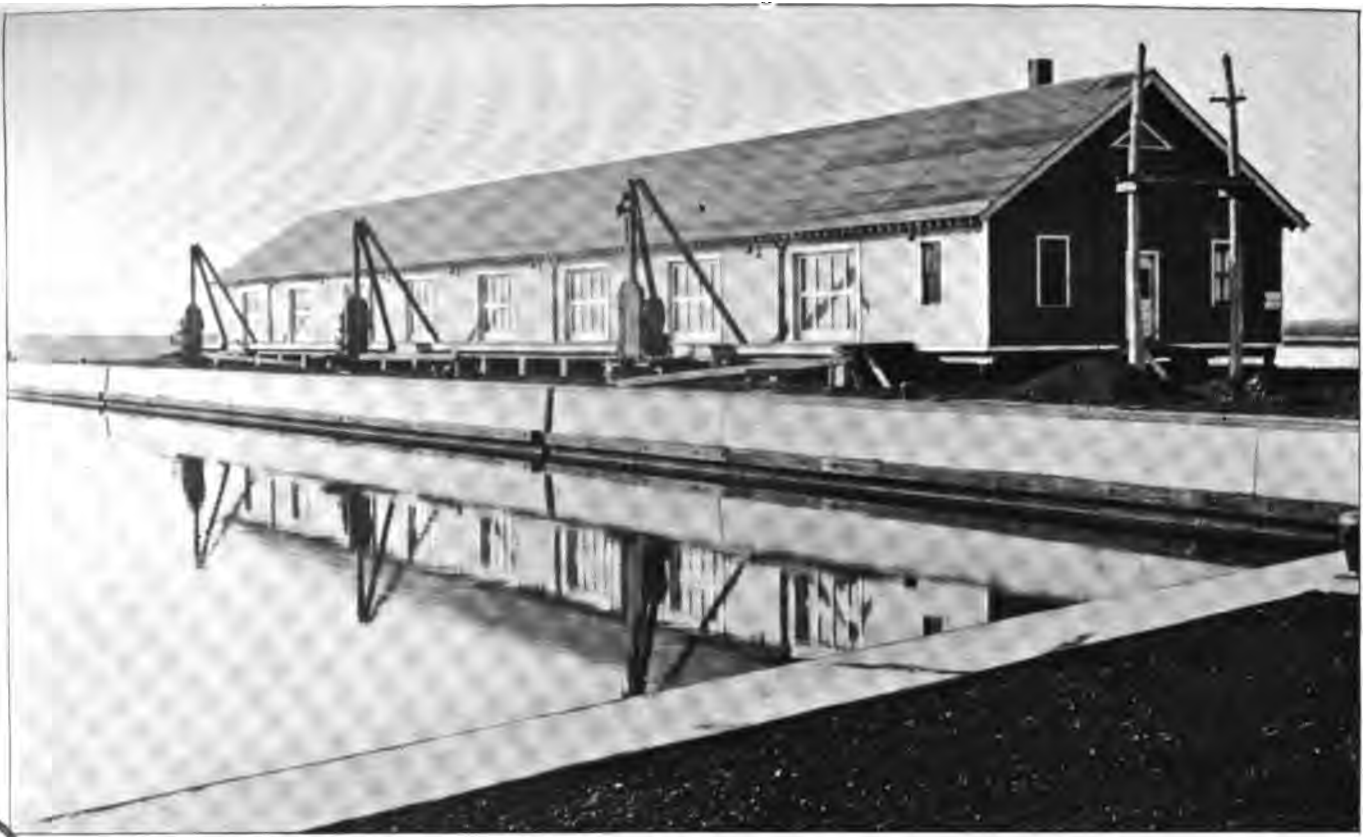
This contract is for constructing a harbor, dockwall and two breakwaters on Oneida lake at Cleveland. It was awarded to Clarence E. Gruner, being signed on February 15, 1915. It was assigned to Barrally & Ingersoll and this assignment was approved by the Superintendent of Public Works March 15, 1915. Construction work began June, 1915. The engineer's preliminary estimate was $34,575.00, the contractor's bid, $30,673.00. The contract price as modified by alterations Nos. 1 and 2 is $37,222.00. Excess quantities to the value of $1,675.00 have been authorized by the Canal Board. The value of work done during the year is $3,320, total done to date, $32,110. The amount paid on extra work orders is $240.00, all prior to the present year.

W. J. Durkan, Assistant Engineer, is in charge.

Concrete tops have been placed on the west breakwater pier, finishing that pier. Four sections of concrete top have been placed on the east breakwater pier. Seven sections of concrete top are yet to be placed to finish this pier.

Terminal Contract No. 29 — *Constantia*

This contract is for constructing a harbor, dockwall and two breakwaters on Oneida lake at Constantia. It was awarded to Barrally & Ingersoll, being signed on November 27, 1914. The engineer's preliminary estimate was $43,573.50, the contractor's bid, $38,733.50. The contract price as modified by alteration No. 1 is $39,793.50. This contract was canceled by the Canal Board August 8, 1917. No work had been done during the fiscal year.



WAREHOUSE AT THE SYRACUSE TERMINAL

The warehouse is situated on the south pier. The Syracuse terminal is one of the latest to be built and opened to traffic.

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Terminal Contract No. 20 — *Syracuse*

This contract is for constructing a terminal basin with a connecting channel to Onondaga lake, also piers, dockwalls, spillway and a highway bridge at Syracuse. It was awarded to the Walsh Construction Co., Inc., being signed on November 4, 1915. Construction work began in same month. The engineer's preliminary estimate was $665,875.00, the contractor's bid, $419,659.00. The contract price as modified by alterations Nos. 1, 2 and 3 is $566,753.26. Excess sheeting and bracing to the value of $25,200.00 has been authorized by the Canal Board. The value of work done during the year is $135,810, total done to date, $513,690. The amount paid on extra work orders is $1,174.50, all prior to the present year.

A. G. Card, Assistant Engineer, is in charge.

During the fiscal year a part of the salt sheds remaining on the terminal site was removed.

Excavation of the channel was resumed about July 15, 1917, by the 20-inch hydraulic dredge *Stanwix* and continued throughout the year except for four months during the winter. The 15-inch hydraulic dredge *Hanson* was also in use, excavating channel for three months during the fall of 1917. A drag-line excavator was in use about six months, excavating and trimming channel slopes, the material being cast over into the channel and rehandled by the dredge. Excavation of the channel south of the Hiawatha street turning basin and of the harbor slips was completed.

The Hiawatha street bridge has been completed and embankment in both approaches finished. Gravel surfacing was placed on both approaches. Paved gutters were laid on both sides of the east approach and 4-inch tile drains, covered with crushed stone, were placed at both wing-walls of the east bridge pier and east abutment.

The dockwalls were completed previous to June 30, 1917, but no excavation was allowed except for the material used to backfill the wall. The remainder of the material for surfacing along dockwall and for grading beyond the limit of surfacing was cast over to the area to be excavated for slips and was removed by the dredge during the past year. Excavation for surfacing was completed and only a small amount remains to be done beyond the limit of surfacing.

Cinder surfacing 18 inches thick was placed on piers and on an area 60 feet wide along the walls. At the south dock, the approach and the north dock, surfacing has been completed, except rolling. Mill cinders are being substituted for gravel for surfacing on account of the inability of the contractor to obtain satisfactory gravel.

The Public Works slip near Hiawatha street has been completed.

The drainage system of this terminal includes ditches along the State's right of way at the harbor, and catch-basins and outlets through the dockwalls and 24-inch tile drain along the south side of Hiawatha street west of the terminal channel. This drainage system has been completed.

Terminal Contract No. 213

This contract is for constructing a frame freight-house and four electrically-operated timber derricks at Syracuse. It was awarded to the Savage Construction Company, being signed on February 14, 1918. Construction work began shortly after award. The engineer's preliminary estimate was $28,200.00, the contractor's bid, $27,032.00. The contract price as modified by alteration No. 1 is $26,997.00. The value of work done during the year is $14,530, total done to date, the same.

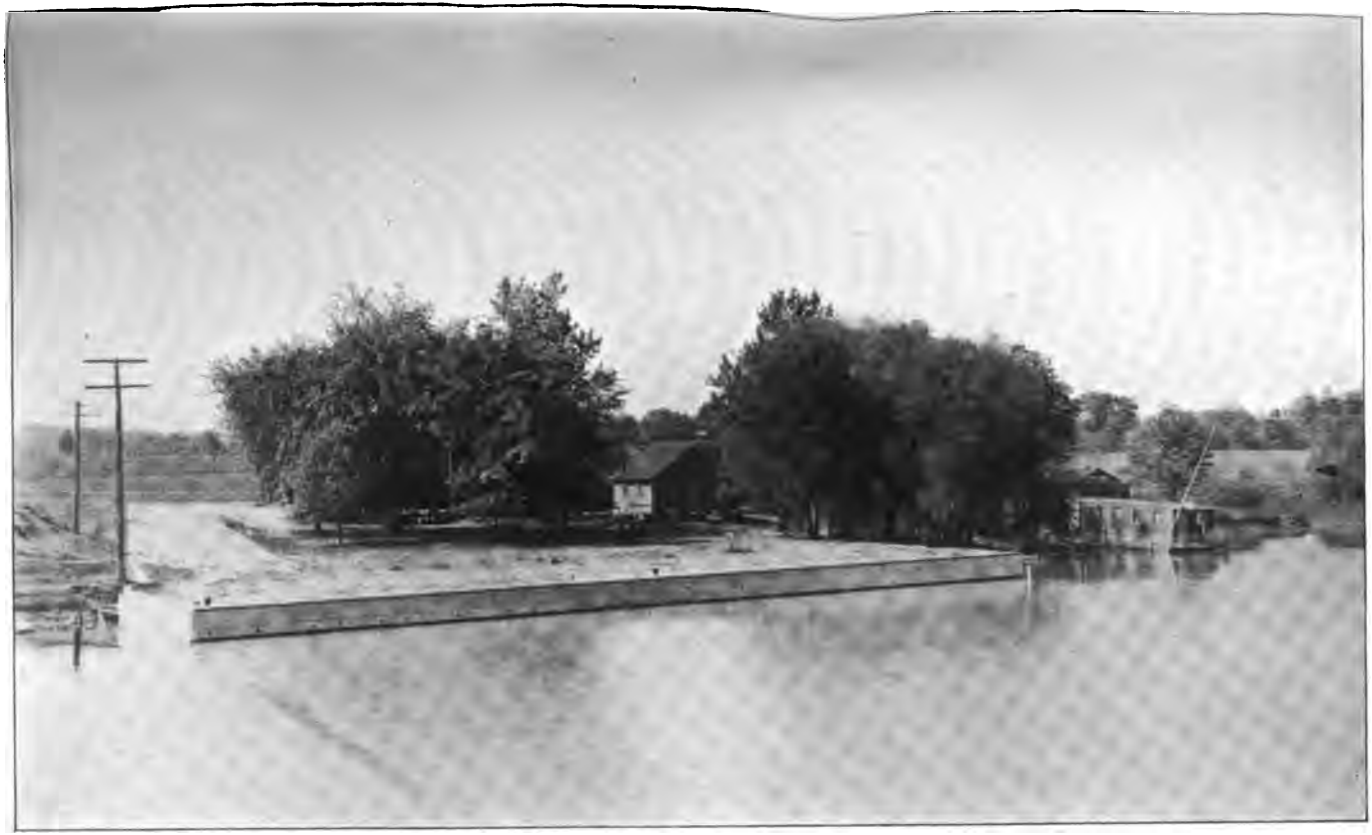
A. G. Card, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board July 24, 1918, provides for changes in electrical installation. It decreases the contract price by $35.00.

The carpenter work is completed, except the hanging of two freight-house doors and a few of the door-guards. The electric lighting system is also completed except the placing of fixtures. Painting is nearly completed.

Terminal Contract No. 106

This contract is for furnishing fourteen two-ton steam tractor cranes for Barge canal terminals. One of these is for the Syracuse terminal. The contract was awarded to the John F. Byers Machine Co., being signed on February 14, 1918. The engineer's preliminary estimate was $5,250.00 per crane, the contractor's



BARGE CANAL TERMINAL AT WEEDSPORT
View showing completed dockwall and graded area.

bid, $5,265.00 per crane. The contract price as modified by alteration No. 1 is $5,515.00 per crane.

Alteration No. 1, approved by the Canal Board March 27, 1918, provides for housing the fourteen cranes under this contract. It increases the contract price by $250.00 per crane.

This crane has not been delivered.

OSWEGO CANAL RESIDENCY

Senior Assistant Engineer Edward J. Berry reports:

This residency comprises all the work on the Oswego canal. Reports follow on contracts Nos. 99, 117, 139 and 167, part of No. 153, and terminal contracts Nos. 30, 33, 33-P, 59 and 60, and part of No. 106.

Contract No. 153

The portion of contract No. 153 affecting this residency is for furnishing and delivering at Phoenix 174 oil-burning lanterns for buoy, stake and bridge lights on the Oswego river. It was awarded to R. B. Wing & Son, being signed on February 28, 1917. The engineer's preliminary estimate was $12.00 per lantern, or $2,088.00 for this residency, the contractor's bid, $12.54 per lantern, or $2,181.96 for this residency. On October 3, 1917, the Canal Board accepted the work and approved the final account, the amount being the same as the contractor's bid.

N. R. McLoud, Assistant Engineer, was in charge.

The lanterns were duly delivered.

Contract No. 167

This contract is for constructing a bascule bridge below lock No. 1, at Culvert street, Phoenix. It was awarded to Walter S. Rae, being signed on October 13, 1917. Construction work began in May, 1918. The engineer's preliminary estimate was $26,653.60, the contractor's bid, $26,689.30. The value of work done to date is $1,000.

N. R. McLoud, Assistant Engineer, is in charge.

Excavation for the south pier of the west abutment is nearly completed. Sand and gravel for concrete is being hauled to the site.

Contract No. 117

This contract is for constructing a swing-bridge over lock No. 2 at Fulton. It was awarded to Walter S. Rae, being signed on April 15, 1918. The engineer's preliminary estimate was $34,713.30, the contractor's bid, $36,513.80.

H. H. Brown, Assistant Engineer, is in charge.

Contract work has not been started.

Contract No. 99

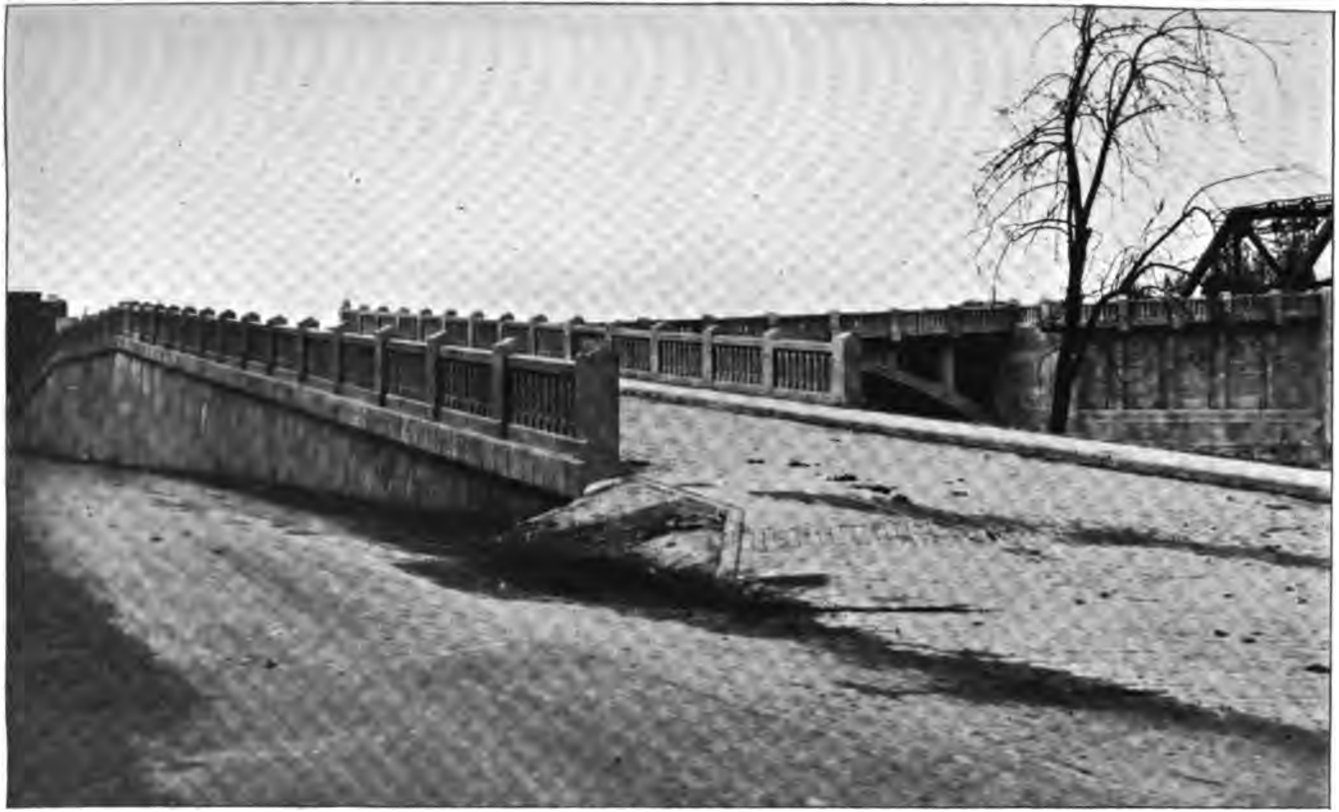
This contract is for constructing portions of a bridge over the Oswego river at Minetto. It was awarded to Larkin and Sangster, being signed on September 12, 1916. The engineer's preliminary estimate was $117,170.75 ($73,082.60 for the steel span and $44,088.15 for the arch span and approach), the contractor's bid, $115,980.75 ($72,992.60 for the steel span and $42,988.15 for the arch span and approach). The value of work done during the year is $70,590 ($56,630 for the steel span and $13,960 for the arch span and approach), total done to date, $87,000 ($56,960 for the steel span and $30,040 for the arch span and approach). The amount paid on extra work orders during the year is $738.53, total to date, the same.

Edw. M. Ellis, Assistant Engineer, is in charge.

An extra work order dated November 28, 1916, provides for repairs to water intake pipe at the southerly end of the Minetto retaining wall. The final account, amounting to $738.53, was approved by the Canal Board September 5, 1917.

This bridge consists of a 70-foot reinforced concrete arch span and a steel span so constructed that it may be converted into a single-leaf bascule lift with clear opening of 135 feet. These spans, together with three reinforced arches having spans of about 90, 100 and 110 feet, respectively, built by the towns, constitute the complete bridge over the Oswego river.

During the past year the contractor has finished the greater part of the contract. The curved retaining walls, the concrete arch of 70 feet span, the bascule pit, the concrete balustrades, part of the sidewalk and about 50 per cent of the subbase for the pavement have been completed this year. In addition, the steel



West Approach to Minetto Bridge

The approach, the arch span, the counterweight pit and the steel span, convertible to a bascule, were built by the State; the three arch spans beyond (not shown here) were built by the towns situated on the respective sides of the river.

span over the river channel of the Barge canal has been erected and partly riveted.

The work has progressed slowly, due to labor shortage and other causes brought about by general conditions. However, all the material for finishing the work is now on the ground and its rapid completion may be expected.

Contract No. 139

This contract is for excavating a channel in the Oswego river from the lower end of lock No. 8, at Oswego, to deep water. It was awarded to H. S. Kerbaugh, Inc., being signed on November 3, 1916. On July 3, 1917, it was assigned to the Empire Engineering Co., Inc., and this assignment was approved by the Superintendent of Public Works August 14, 1917. Construction work began October 29, 1916. The engineer's preliminary estimate was $25,280.00, the contractor's bid, $25,912.00. The value of work done during the year is $707. The work was accepted October 3, 1917, and the final account, amounting to $17,836.64, was approved by the Canal Board October 23, 1917.

George H. Haley, Assistant Engineer, was in charge.

The channel has been swept, all obstructions removed and the contract completed.

Terminal Contract No. 30 — *Oswego, River Terminal*

This contract is for constructing a dockwall, an approach to the terminal and appertaining structures on the east side of the Oswego river between Schuyler and Cayuga streets, Oswego. It was awarded to Henry P. Burgard, being signed on March 24, 1916. Construction work began in April, 1916. The engineer's preliminary estimate was $103,700.00, the contractor's bid, $90,984.00. The contract price as modified by alterations Nos. 1, 2 and 3 is $106,166.70. The value of work done during the year is $24,480, total done to date, $96,180. The amount paid on extra work orders during the year is $551.50, total to date, $1.406.50.

George H. Haley, Assistant Engineer, was in charge.

Alteration No. 3, approved by the Canal Board June 5, 1918, provides for reducing the quantity of embankment and for substituting brush treatment for tank treatment of sawed lumber. It decreases the contract price by $416.40.

An extra work order dated November 14, 1916, provides for building a temporary timber flume to carry the ice and rubbish away from the head-race of the People's Gas and Electric Co. and to remove this flume when it is no longer required, also for the construction of a new vertical wall along the westerly side of the hydraulic canal. The final account, amounting to $950.00, was approved by the Canal Board February 13, 1918.

An extra work order dated March 1, 1918, provides for certain changes to the culvert entrance and gate at the northerly end of the hydraulic canal and for removing and later rebuilding an old bridge belonging to the city of Oswego. The final account, amounting to $456.50, was approved by the Canal Board April 24, 1918.

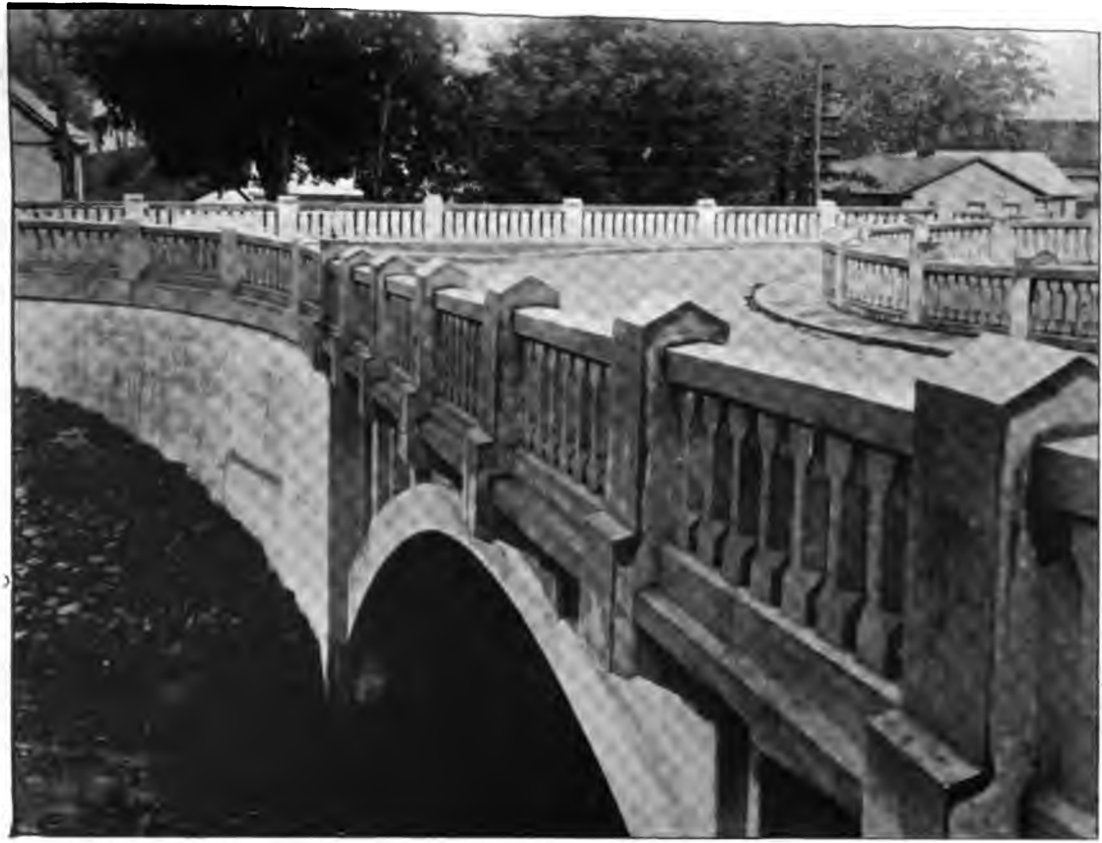
The dockwall, highway retaining wall and the hydraulic canal wall were completed in October, 1917. This finished the concrete work. The highway approach to the dock was finished and fender timbers were placed on the dockwall. The coffer-dam in the river was removed, a little of the material being used to complete the fill behind the dockwall and the remainder being spoiled either in Lake Ontario or in the Oswego river above dam No. 6. The work was practically finished in November.

The removal of the temporary timber flume constructed under the work order of November 14, 1916, was taken over by the owners of the property on which it was located.

The work under the extra work order of March 1, 1918, has also been finished.

Terminal Contract No. 33 — *Oswego, Lake Terminal*

This contract is for constructing a terminal pier, excavating channels, removing a portion of the U. S. breakwater, etc., at the foot of West First street, Oswego. It was awarded to H. S. Kerbaugh, Inc., being signed on July 10, 1914. Construction work began August 15, 1914. The engineer's preliminary estimate was $415,420.00, the contractor's bid, $348,684.50. The contract price as modified by alteration No. 1 is $351,175.50. The value of work done during the year is $448. The work was accepted October 31, 1917, and the final account, amounting to $333,388.36, was approved by the Canal Board July 17, 1918.



WEST END OF BRIDGE AT MINETTO

This type of approach was made necessary so as to maintain proper grades in the village street. The construction is reinforced concrete.

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The amount paid on extra work orders during the year is $4,863.90, total to date, the same.

George H. Haley, Assistant Engineer, was in charge.

An extra work order dated September 21, 1917, provides for furnishing labor and materials necessary to enclose the ends of the U. S. breakwater. The final account, amounting to $4,863.90, was approved by the Canal Board January 16, 1918.

The contract work was finished by July 1, 1917.

The permit issued by the U. S. Government for the removal of a portion of its breakwater across the site of the terminal pier stipulated that the ends of the inner breakwater at this opening should be built up and provided with fenders. A close row of piles was driven around the ends of the piers, the enclosed space filled in and fender timber bolted in place. This work was done under the extra work order.

Terminal Contract No. 33-P

This contract is for paving part of the terminal pier at Oswego. It was awarded to Guy B. Dickison, being signed on May 7, 1918. The engineer's preliminary estimate was $11,010.00, the contractor's bid, $11,730.00.

George H. Haley, Assistant Engineer, is in charge.

No contract work has been done to date, but preparations for starting are now in progress.

Terminal Contract No. 59

This contract is for constructing a railroad track approach to the terminal pier at Oswego. It was awarded to W. F. Martens, being signed on May 6, 1918. The engineer's preliminary estimate was $5,100.00, the contractor's bid, $6,516.00. The value of work done to date is $1,620.00

George H. Haley, Assistant Engineer, is in charge.

Construction work began in May, 1918, and has continued to date. Excavation for track has been completed and ties and rails laid the entire length of the contract. A No. 8 turnout has been assembled and laid and connection made with the D., L. & W. R. R. Only a part of the ballast has arrived to date and the track has not been ballasted nor brought to final alignment.

Terminal Contract No. 60

This contract is for constructing railroad and crane tracks on the terminal pier at Oswego. It was awarded to W. F. Martens, being signed on May 6, 1918. The engineer's preliminary estimate was $8,365.00, the contractor's bid, $9,690.00. The value of work done during the year is $3,410, total done to date, the same.

George H. Haley, Assistant Engineer, is in charge.

Construction work began in May, 1918, and has continued to date. Excavation for tracks has been made and ties and rails placed, but ballasting and final alignment of tracks has not yet been done.

Terminal Contract No. 106

This contract is for furnishing fourteen two-ton stream tractor cranes for Barge canal terminals. One of these is for use at Oswego. The contract was awarded to the John F. Byers Machine Co., being signed on February 14, 1918. The engineer's preliminary estimate was $5,250.00 per crane, the contractor's bid, $5,265.00 per crane. The contract price as modified by alteration No. 1 is $5,515.00 per crane. The value of work done at Oswego during the year is $4,210.00, done to date, the same.

Alteration No. 1, approved by the Canal Board March 27, 1918, provides for housing the fourteen cranes under this contract. It increases the contract price by $250.00 per crane.

One crane was delivered at Oswego May 31, 1918.

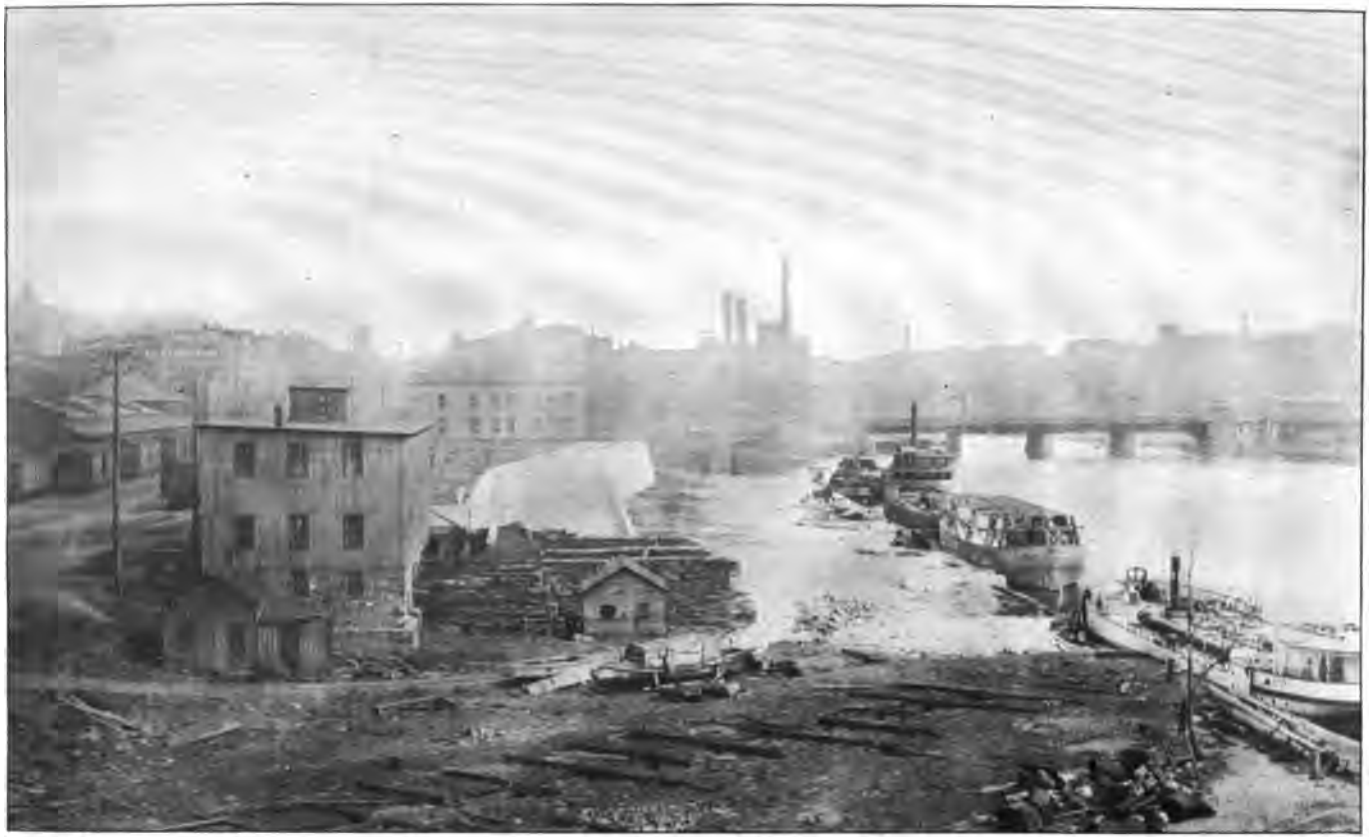
CAYUGA AND SENECA CANAL RESIDENCY

Senior Assistant Engineer H. C. Smith reports:

This residency comprises all the work on the Cayuga and Seneca canal. Reports follow on contracts A-1, F, L, M, P and R and an extra work order on contract C, which was not settled last year, and also on the several railroad crossings.

Contract F

This contract is for constructing the substructures, superstructures and approaches of the three following bridges: Free bridge, Demont's bridge and Lake road bridge. It was awarded



BARGE CANAL TERMINAL AT OSWEGO (RIVER TERMINAL)
This terminal is for local rather than transfer traffic. The view shows well the approach, which, because of difficult grades and an intervening raceway, had to extend over a bridge and down a long incline.

to the Stanley Construction Company, being signed on July 20, 1914. Construction work began March 19, 1915. The engineer's preliminary estimate was $126,263.00, the contractor's bid, $119,913.00. The contract price as modified by alterations Nos. 1 and 2 is $142,578.70. The value of work done during the year is $7,240. The work was accepted December 4, 1917, and the final account, amounting to $127,399.75, was approved by the Canal Board February 13, 1918.

L. L. Hadley, Assistant Engineer, was in charge.

At Free bridge and at Lake road bridge the concrete floors with bituminous surfacing were placed, approach fills were completed, gravel lining was placed for road surfacing and wooden fence was completed. At Free bridge riprap was placed around the east abutment. At Lake road pipe railing was placed on the south wing of the east abutment.

At Demont's bridge the old temporary bridge was removed.

Contract R

This contract is for completing the unfinished work at several locations on the Cayuga and Seneca canal. It was awarded to the Sherman-Stalter Co., being signed on April 30, 1918. Construction work began on May 22, 1918. The engineer's preliminary estimate was $185,259.00, the contractor's bid, $180,122.80. The value of work done to date is $15,170.

L. L. Hadley, Assistant Engineer, is in charge.

Part of the prism at Mud lock was excavated and some of the spoil in Cayuga lake that had been originally excavated by a dipper-dredge was removed. The excavation at the upper side of the New York Central railroad bridge, 2½ miles east of Seneca Falls, was nearly finished and all the hydraulic excavation at the two Lehigh Valley railroad bridges near Seneca lake was made. This work was done with the hydraulic dredge *Clyde*.

At Free bridge a part of the old temporary highway bridge was removed and at Mud lock the old lock walls were drilled and blasted.

The dipper-dredge *Erie* has been brought to the site of the contract and set up ready for work at Mud lock.

Contract A-1

This contract is for making repairs to and constructing a fish-ladder around dam No. 1, near Cayuga. It was awarded to the Sherman-Stalter Company, being signed on July 24, 1916. Construction work began August 21, 1916. The engineer's preliminary estimate was $29,019.30, the contractor's bid, $25,831.05. The contract price as modified by alteration No. 1 is $26,842.50. Excess metal reinforcement to the value of $28.00 has been authorized by the Canal Board. The value of work done during the year is $610, total done to date, $24,750. On January 23, 1918, the Canal Board accepted the work and approved the final account, which amounted to $24,749.82.

C. H. Swick, Assistant Engineer, was in charge.

The contract work was finished last year, but some cleaning up remained to be done.

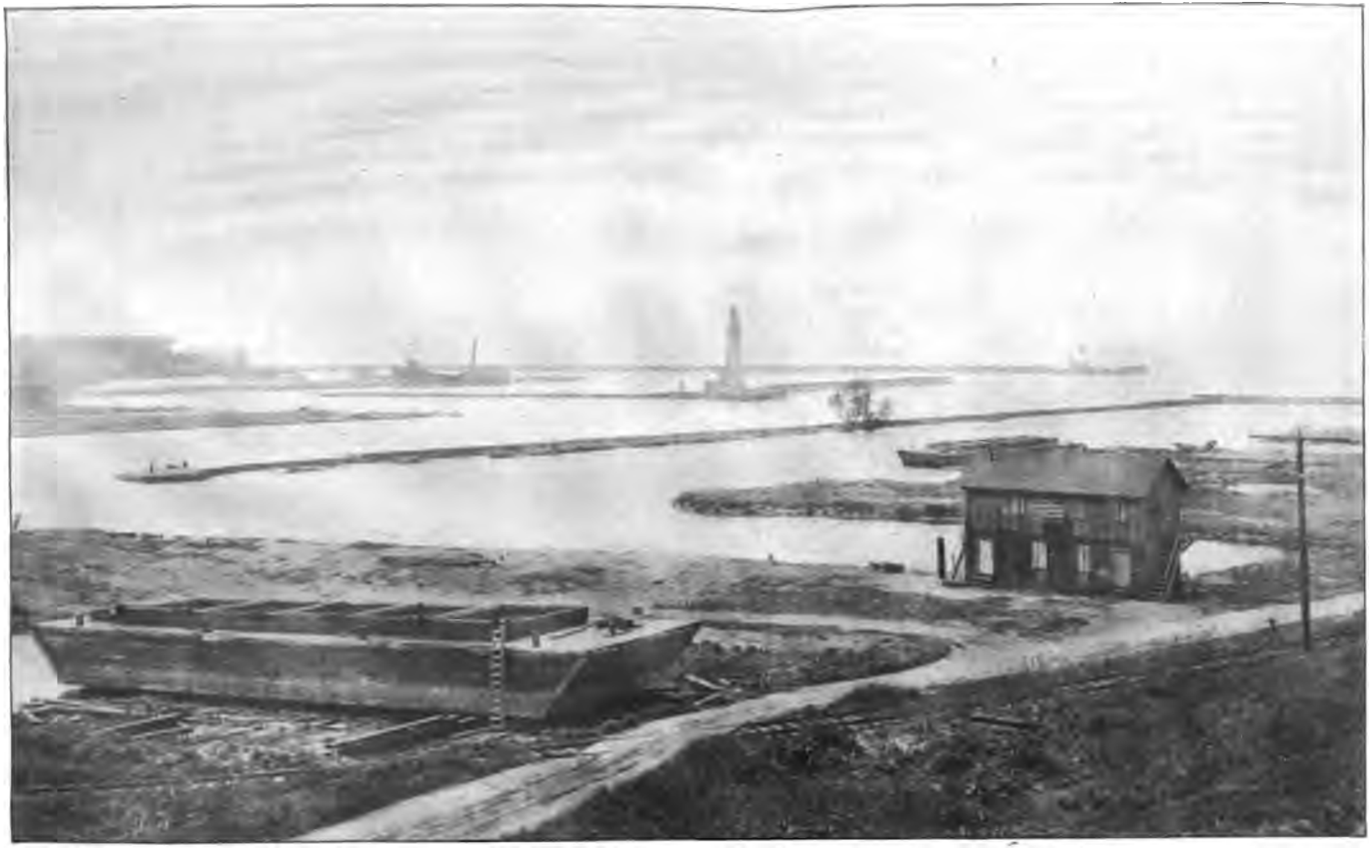
Contract M

This contract is for constructing power-plants and for furnishing and installing electrical equipment and machinery for operating and lighting locks Nos. 1, 2, 3 and 4. It was awarded to Lupfer & Remick, being signed on November 5, 1914. Construction work began January 23, 1915. The engineer's preliminary estimate was $176,087.00, the contractor's bid, $188,031.00. The contract price as modified by alteration No. 1 is $191,436.00. Excess chipping concrete to the value of $360.00 has been authorized by the Canal Board. The value of work done during the year is $21,000, total done to date, $186,100.

C. H. Swick, Assistant Engineer, was in charge until September 1, 1917, at which date the work was taken over by M. L. Babcock, Junior Assistant Engineer.

An extra work order dated March 16, 1918, provides for changing the trash racks at lock No. 2, payment to be made on the basis of cost plus 15 per cent. The estimated cost is $221.35.

During the year the installation of the hydraulic equipment has been completed and all the electrical equipment in the power-house at dam No. 2 has been installed. After connecting and adjusting the electrical machinery and equipment that had been



Barge Canal Terminal at Oswego (Lake Terminal)

The canal pier, which is the one with the boats lying alongside, is 1,010 feet long and has rail connections. It is the point of transfer between the canal line and lake and rail lines.

installed on locks Nos. 2 and 3, the power-plant was placed in operation and the tests were run.

The contract was practically completed in May, 1918. About 95 per cent of the final estimate has been prepared.

The extra work order was made necessary by the imperfect lines of the guide-grooves left in the concrete at the time of building the dam. The reservoir having been filled at an early date, no opportunity was given for chipping out these guides. The racks have been changed, but the account has not been rendered.

Contract C

This contract was for constructing two locks, a dam, etc., at Seneca Falls. Larkin & Sangster were the contractors. The contract was finished and the final account approved by the Canal Board prior to this year, but an extra work order dated October 5, 1915, had not been settled. This work order provides for repairing embankment south of lock No. 3, and constructing a concrete apron below dam No. 2. The final account, amounting to $8,565.05, was approved by the Canal Board September 18, 1917. The amount paid on extra work orders during the year is $284.51, total to date, $70,193.91.

No work was done during the year.

Contract P

This contract is for constructing a concrete cut-off wall below the walls of lock No. 3, Seneca Falls. It was awarded to The Foundation Company, being signed on June 8, 1917. The engineer's preliminary estimate was $76,412.50, the contractor's bid, $82,850.00. Excess quantities to the value of $17,600.00 have been authorized by the Canal Board. The value of work done during the year is $98,372. The work was accepted March 13, 1918, and the final account, amounting to $98,372.32, was approved by the Canal Board May 1, 1918. The amount paid on extra work orders during the year is $9,510.74, total to date, the same.

L. W. Bentley, Junior Assistant Engineer, was in charge.

An extra work order dated December 1, 1917, provides for constructing a concrete cut-off wall under the core wall of the earth dam at lock No. 3 and for digging test pits in the bottom of the tunnels. The final account, amounting to $6,317.69, was approved by the Canal Board April 24, 1918.

An extra work order dated January 8, 1918, provides for removing rubbish and repairing floor of lock No. 3. The final account, amounting to $3,193.05, was approved by the Canal Board April 24, 1918.

The contract proper consisted in constructing a concrete cut-off wall, 4 feet wide and from 10 to 15 feet high, under the upper end of lock No. 3, where the rock foundation developed porous places. In plan this cut-off wall is the shape of a horseshoe with the bend of the horseshoe under the upper breast-wall and the ends extending under the north and south lock walls some 200 feet. The top of this cut-off wall is in contact with the bottom of the original lock walls. The work was done under air pressure by sinking a shaft on the south side of the lock to the lowest level of the bottom of the tunnel, then a connecting tunnel was driven to a point midway under the near lock wall and from here the actual work on the cut-off wall was started, working two headings, one to the right and one to the left. At first the lower portion of the tunnel about 6 feet high was driven all the way around. As this progressed, at intervals of about eight feet, test holes were drilled in the roof upward to the concrete lock walls and grouted. After this pilot tunnel had been completed the rock was stoped down from the roof in sections, working from both ends back to the connecting tunnel. As the excavation for a section was finished, that section of tunnel was filled with concrete.

Contract L

This contract is for constructing substructures, superstructures and approaches of two highway bridges, one at Gorham street, Waterloo, and the other at Kingdom road, between Waterloo and Seneca Falls. It was awarded to Scott Brothers, being signed on September 23, 1915. Construction work began October 5, 1915. The engineer's preliminary estimate was $71,469.25, the contractor's bid, $59,928.40. The value of work done during

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the year is $539. On October 3, 1917, the Canal Board accepted the work and approved the final account, which amounted to $53,549.16.

C. H. Swick, Assistant Engineer, was in charge.

At Kingdom road bridge some lining was placed on the south approach and the fourth-class riprap northwest of the bridge was arranged. This work, done before July 20, 1917, completed the contract.

Railroad Crossings

N. Y. C. R. R. bridges at Cayuga. About the middle of September, 1917, work was started on the foundations for the new three-span bridge over the Barge canal. The substructures for this bridge were completed and made ready for the steel. The abutments at the old lift-bridge were enlarged to meet the new grade. The yards at Cayuga were raised. Six of the ten old lake bridge spans were filled in with earth and the trusses removed. Both approaches to the new main bridge were graded and practically all ballasting has been completed. On June 14, 1918, work was started on the construction of a 60-foot flood-span near the west side of Cayuga lake.

N. Y. C. R. R. bridge at Demont's. Early in September, 1916, work was started on rebuilding this bridge across the canal about 2½ miles east of Seneca Falls. During the past year the new east span was completed, the old west span was moved into position upon the new substructure, and traffic was turned over the new location on May 10, 1918.

L. V. R. R. bridges near Geneva. Late in August, 1916, work was started on changing the Lehigh Valley bridges over the canal near the outlet of Seneca lake. During the past year both abutments of the main line bridge were underpinned with concrete down to an elevation several feet below canal grade. The abutments and back-fill for the Ithaca branch bridge were completed and the new steel girder span was erected, thus completing the work at both of these bridges except for removing the old pier of the Ithaca branch bridge.

THE FOLLOWING STATEMENTS SHOW THE NAMES, RANK AND COMPENSATION OF ENGINEERS EMPLOYED IN THE MIDDLE DIVISION OF THE DEPARTMENT OF THE STATE ENGINEER AND SURVEYOR, TOGETHER WITH INCIDENTAL EXPENSES, FOR THE FISCAL YEAR ENDED JUNE 30, 1918.

Ordinary Repairs to Canals — Erie Canal

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
Guy Moulton	Division engineer	$4,800 per year	$1,200 00		$1,200 00
E. J. Berry	Senior assistant engineer	3,300 per year	483 76		483 76
I. S. Badger	Assistant engineer	2,580 per year	207 83		207 83
Carl L. Bannister	Assistant engineer	2,580 per year	410 00		410 00
W. J. Durkan	Assistant engineer	2,580 per year	165 30		165 30
C. W. Costello	Assistant engineer	2,580 per year	157 67	$1 02	158 69
R. K. Sheldon	Assistant engineer	2,580 per year	495 00	35 15	530 15
David R. Lee	Assistant engineer	2,340 per year	536 35	6 00	542 35
E. L. Keeler	Junior assistant engineer	1,800 per year	185 00		185 00
Carl F. Hopstein	Junior assistant engineer	1,800 per year	237 74		237 74
J. J. Ryan	Junior assistant engineer	1,800 per year	352 33		352 33
J. H. Forth	Junior assistant engineer	1,440 per year	240 00		240 00
J. P. Walsh	Junior assistant engineer	1,440 per year	165 55		165 55
F. D. Pieri	Engineering assistant	840 per year	28 00		28 00
H. L. Bassett	Cashier	1,800 per year	600 00		600 00
W. S. Morris	Estimate clerk	2,100 per year	1,725 00	9 19	1,734 19
Harvey Wagner	Stenographer	1,500 per year	500 00		500 00
C. W. Chase	Chauffeur	1,500 per year	480 00		480 00
John Connors	Janitor	1,200 per year	200 00		200 00
C. H. Osterhout	Foreman	900 per year	93 15		93 15
Margaret Sheridan	Telephone operator	720 per year	120 00		120 00
E. F. Allen	Laborer	2 50 per day	62 50		62 50
C. Plummer	Laborer	2 50 per day	82 50		82 50
C. H. Norton	Laborer	2 50 per day	65 00		65 00
			$8,792 68	$51 36	$8,844 04
	Incidental Expenses				
Stationery and printing				$41 71	
Livery				30 00	
Postage				97 04	
Telephone and telegraph				57 80	
Miscellaneous				563 10	
					789 65
Total					$9,633 69

Ordinary Repairs to Canals — Black River Canal

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
E. J. Berry	Senior assistant engineer	$3,300 per year	$127 50	$6 83	$134 33
Carl F. Hopstein	Junior assistant engineer	1.500 per year	172 93	23 93	196 86
Total			$300 43	$30 76	$331 19

Construction of Barge Canal — Erie Canal

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
Guy Moulton	Division engineer	$4,800 per year	$900 00	$112 77	$1,012 77
R. J. Berry	Senior assistant engineer	3,300 per year	911 52	105 24	1,016 76
James Burden	Senior assistant engineer	3,060 per year	2,155 16	150 00	2,305 16
L. C. Hulburd	Senior assistant engineer	3,300 per year	938 00	48 94	986 94
H. L. Bassett	Cashier	1,800 per year	600 00	....	600 00
W. S. Morris	Estimate clerk	2,100 per year	....	10 85	10 85
L. J. Mulhauser	Stenographer	1,500 per year	484 27	....	484 27
G. P. Ketchum	Stenographer	1,000 per year	583 31	....	583 31
C. W. Costello	Assistant engineer	2,580 per year	1,445 72	86 46	1,532 18
Foster B. Crocker	Assistant engineer	2,580 per year	2,520 00	153 46	2,673 46
Irvin S. Badger	Assistant engineer	2,580 per year	1,845 88	42 46	1,888 34
Lewis Bartlett	Assistant engineer	2,580 per year	2,444 91	233 62	2,678 53
George H. Briggs	Assistant engineer	2,580 per year	1,930 70	42 32	1,973 02
W. J. Durkan	Assistant engineer	2,580 per year	1,538 83	130 81	1,669 64
J. G. Palmer	Assistant engineer	2,580 per year	2,440 00	507 09	2,947 09
Carl L. Bannister	Assistant engineer	2,580 per year	641 36	2 18	643 54
Robert K. Sheldon	Assistant engineer	2,580 per year	134 60	59 55	194 15
Harry H. Brown	Assistant engineer	2,580 per year	422 46	51 48	473 94
David R. Lee	Assistant engineer	2,340 per year	560 85	....	560 85
R. E. Swinney	Assistant engineer	2,340 per year	1,176 96	26 98	1,203 94
G. S. Haight	Assistant engineer	2,340 per year	2,219 00	....	2,219 00
D. H. Judson	Assistant engineer	2,208 per year	503 73	50 78	554 51
Solomon Reswick	Assistant engineer	2,208 per year	1,104 79	....	1,104 79
R. W. Smith	Assistant engineer	2,208 per year	1,104 00	40	1,104 40
J. L. Southworth	Assistant engineer	1,980 per year	1,155 00	1 10	1,156 10
D. J. Levinson	Assistant engineer	1,980 per year	1,208 04	67 30	1,275 34
H. Pell	Assistant engineer	1,980 per year	287 42	45 70	333 12
J. Otis Burt	Assistant engineer	1,980 per year	79 81	....	79 84
W. S. Sarton	Assistant engineer	1,980 per year	79 84	....	79 84
Carl F. Hopstein	Junior assistant engineer	1,800 per year	905 21	70 30	975 51
E. L. Keeler	Junior assistant engineer	1,800 per year	1,370 17	52 84	1,423 10
A. J. Crowe, Jr	Junior assistant engineer	1,680 per year	733 49	22 16	755 65
J. J. Ryan	Junior assistant engineer	1,800 per year	110 41	....	110 41
G. H. Thomas	Junior assistant engineer	1,800 per year	1,740 65	4 40	1,745 05
Don A. Wilcox	Junior assistant engineer	1,800 per year	1,320 72	....	1,320 72
N. R. McLoud	Junior assistant engineer	1,800 per year	891 94	184 32	1,076 26
J. J. Gawkins	Junior assistant engineer	1,680 per year	907 74	....	907 74
C. V. O'Malley	Junior assistant engineer	1,680 per year	850 00	9 32	859 32
E. C. Neudecker	Junior assistant engineer	1,680 per year	980 00	90	980 90
R. W. Austin	Junior assistant engineer	1,680 per year	239 35	....	239 35
Foster J. Beach	Junior assistant engineer	1,680 per year	1,390 00	....	1,390 00
M. H. Boigeol	Junior assistant engineer	1,680 per year	1,470 00	....	1,470 00
E. C. Smith	Junior assistant engineer	1,680 per year	1,520 00	....	1,520 00
G. L. Stillman	Junior assistant engineer	1,680 per year	1,036 99	75	1,037 74
M. J. Chryst	Junior assistant engineer	1,560 per year	279 57	....	279 57
J. H. Forth	Junior assistant engineer	1,440 per year	900 00	....	900 00
H. A. Shafer	Junior assistant engineer	1,440 per year	1,346 13	....	1,346 13
D. B. Lynch	Junior assistant engineer	1,440 per year	870 00	....	870 00
J. P. Walsh	Junior assistant engineer	1,440 per year	78 19	....	78 19
R. E. Homan	Junior assistant engineer	1,320 per year	1,320 00	....	1,320 00
J. P. Mullin	Junior assistant engineer	1,320 per year	656 45	....	656 45
W. E. Stahl	Junior assistant engineer	1,200 per year	164 94	....	164 94
D. E. Robbins	Junior assistant engineer	1,200 per year	58 06	....	58 06
H. W. Leshensky	Junior assistant engineer	1,200 per year	38 71	....	38 71
F. S. Corey	Junior assistant engineer	1,200 per year	264 52	....	264 52
D. D. Rogers	Junior assistant engineer	1,200 per year	306 46	....	306 46
R. J. Storm	Junior assistant engineer	1,200 per year	760 11	....	760 11
M. R. Howard	Junior assistant engineer	1,110 per year	44 76	....	44 76
R. J. Storm	Engineering assistant	1,200 per year	108 39	....	108 39
W. E. Stahl	Engineering assistant	1,200 per year	48 39	....	48 39
L. A. Kavanagh	Engineering assistant	1,080 per year	1,041 29	....	1,041 29
F. Lutz	Engineering assistant	1,020 per year	800 78	....	800 78
E. G. Warner	Engineering assistant	1,020 per year	425 16	....	425 16
A. W. Bischel	Engineering assistant	960 per year	376 00	....	376 00
H. P. Hensler	Engineering assistant	960 per year	234 67	....	234 67
Wm. Craban	Engineering assistant	960 per year	46 94	....	46 94
Sol. Lebowitz	Engineering assistant	840 per year	50 43	....	50 43
E. H. Carlson	Engineering assistant	840 per year	51 33	....	51 33
C. M. Guild	Engineering assistant	840 per year	13 55	....	13 55
L. H. Hall	Engineering assistant	840 per year	13 55	....	13 55
M. M. Seidmann	Engineering assistant	840 per year	4 52	....	4 52

Construction of Barge Canal — Erie Canal — (Continued)

Chapter 117, Laws of 1913, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
I. H. Steigman	Engineering assistant	$840 per year	$4 52		$4 52
Gail Bowler	Engineering assistant	840 per year	410 96		410 96
E. V. Jones	Engineering assistant	840 per year	82 57		82 57
E. S. Pieri	Engineering assistant	840 per year	467 00		467 00
W. J. Kelly	Inspector of engineering works	1,560 per year	650 00		650 00
W. N. Dutcher	Inspector of engineering works	1,560 per year	130 00		130 00
Frank Ladd	Boatman	3 00 per day	507 00	$1 10	508 10
W. M. Scanlon	Boatman	3 00 per day	141 00		141 00
G. W. Mann	Boatman	3 00 per day	162 00		162 00
G. E. Barnard	Boatman	3 00 per day	39 00		39 00
A. Preston	Boatman	3 00 per day	237 00		237 00
Clark H. Norton	Laborer	2 50 per day	525 00		525 00
P. Maroney	Laborer	2 50 per day	65 00		65 00
L. G. Hyle	Laborer	2 50 per day	50 00		50 00
G. W. Moulton	Laborer	2 50 per day	30 00		30 00
F. Voorhees	Laborer	2 50 per day	263 50		263 50
F. S. Travers	Laborer	2 50 per day	515 00		515 00
T. D Clancy	Laborer	2 50 per day	460 00		460 00
F. Brophy	Laborer	2 50 per day	780 00		780 00
A. F. Meyers	Laborer	2 50 per day	460 00		460 00
J. Reh	Laborer	2 50 per day	462 50		462 50
J. J. Cross	Laborer	2 50 per day	460 00		460 00
W. Worden	Laborer	2 50 per day	367 50	1 20	368 70
W. T. Tanner, Jr	Laborer	2 50 per day	782 50		782 50
G. W. Wilson	Laborer	2 50 per day	752 50		752 50
W. C. Ralston	Laborer	2 50 per day	77 50	1 80	79 30
H. Higgins	Laborer	2 50 per day	257 50		257 50
J. Merideth	Laborer	2 50 per day	275 00		275 00
C. P. Plummer	Laborer	2 50 per day	205 00		205 00
W. Bird	Laborer	2 50 per day	250 00		250 00
C. W. Chase	Chauffeur	1,500 per year	575 00	47 25	622 25
J. Connors	Janitor	1,200 per year	50 00		50 00
C. H. Osterhout	Fireman	900 per year	37 50		37 50
Geo. Ebeling	Gage reader	10 per month	90 00		90 00
Dan Burhans	Gage reader	10 per month	30 00		30 00
J. R. Bixby	Gage reader	7 per month	84 00		84 00
Daniel Brown	Gage reader	7 per month	21 00		21 00
Marie Brandt Brown	Gage reader	7 per month	84 00		84 00
A. H. Hoffmeister	Gage reader	7 per month	84 00		84 00
A. H. Lefebvre	Gage reader	7 per month	70 00		70 00
H. L. Ropes	Gage reader	7 per month	14 00		14 00
Ida C. Powell	Gage reader	7 per month	84 00		84 00
W. S. Siver	Gage reader	7 per month	84 00		84 00
John Phillips	Gage reader	6 per month	72 00		72 00
W. H. Dunn	Gage reader	5 per month	60 00		60 00
Mrs. M. Hannon	Gage reader	4 per month	4 00		4 00
H. W. Hoch	Gage reader	5 per month	55 00		55 00
Mrs. J. R. Hiller	Gage reader	7 per month	84 00		84 00
Fred Chamberlain	Gage reader	5 per month	60 00		60 00
A. R. Yates	Gage reader	5 per month	60 00		60 00
M. Kennedy	Gage reader	5 per month	15 00		15 00
A. R. Merrett	Gage reader	5 per month	65 00		65 00
L. Sitterly	Gage reader	7 per month	84 00		84 00
F. Shane	Gage reader	5 per month	30 00		30 00
M. A. Smith	Gage reader	5 per month	32 10		32 10
Wm. Prettie	Gage reader	10 per month	120 00		120 00
Wm. H. Burns	Gage reader	5 per month	60 00		60 00
M. Quimby	Gage reader	5 per month	60 00		60 00
H. D. Schmidt	Livery			409 90	409 90
G. E. Wright	Livery			400 00	400 00
L. A. Withey	Livery			175 00	175 00
W. J. Helfert	Livery			584 00	584 00
E. A. Thomas	Livery			270 00	270 00
Stanwix Hall Livery	Livery			422 00	422 00
C. L. Hickland	Livery			234 00	234 00
Neil Havens	Livery			982 00	982 00
M. K. Ryan	Livery			6 00	6 00
E. C. Rogers	Livery			318 50	318 50
M. J. Colvin	Livery			317 00	317 00
			$68,850 58	$6,444 23	$75,294 81

Construction of Barge Canal — Erie Canal — (Concluded)

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
	Incidental Expenses				
Instruments and tools				$75 00	
Stationery and printing				46 55	
Office rent				785 00	
Fuel and light				812 87	
Postage				167 97	
Telephone and telegraph				463 90	
Miscellaneous				2,515 41	
					4,866 70
Total					$80,161 51

Construction of Barge Canal — Oswego Canal

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
Guy Moulton	Division engineer	$4,800 per year	$900 00	$56 92	$956 92
E. J. Berry	Senior assistant engineer	3,300 per year	169 14	3 35	172 49
L. C. Hulburd	Senior assistant engineer	3,060 per year	759 00	41 55	800 55
Harvey Wagner	Stenographer	1,500 per year	1,000 00		1,000 00
L. J. Mulhauser	Stenographer	1,500 per year	345 83		345 83
R. M. Ellis	Assistant engineer	2,580 per year	1,695 15	588 82	2,283 97
G. H. Haley	Assistant engineer	2,580 per year	723 24	161 66	884 90
I. S. Badger	Assistant engineer	2,580 per year	76 29	2 38	78 67
W. J. Durkan	Assistant engineer	2,340 per year	69 19		69 19
Carl L. Bannister	Assistant engineer	2,340 per year	44 03		44 03
F. H. Budd	Assistant engineer	2,340 per year	59 35	65 81	125 16
W. S. Saxton	Assistant engineer	2,160 per year	1,915 16		1,915 16
N. R. McLoud	Junior assistant engineer	1,800 per year	908 06	155 28	1,063 34
Carl F. Hopstein	Junior assistant engineer	1,800 per year	68 87	24 06	92 93
M. H. Boignol	Junior assistant engineer	1,800 per year	150 00		150 00
R. L. Keeler	Junior assistant engineer	1,800 per year	48 39		48 39
A. J. Crowe, Jr	Junior assistant engineer	1,680 per year	466 18		466 18
C. L. Fox	Junior assistant engineer	1,680 per year	356 42		356 42
D. E. Robbins	Junior assistant engineer	1,440 per year	505 94		505 94
A. T. Brown	Junior assistant engineer	1,440 per year	712 58		712 58
H. L. DuBois	Junior assistant engineer	1,320 per year	31 94		31 94
R. J. Storm	Junior assistant engineer	1,200 per year	100 00		100 00
H. W. Leshensky	Junior assistant engineer	1,200 per year	33 33		33 33
W. J. Bell	Junior assistant engineer	1,200 per year	93 26		93 26
Wm. Graham	Engineering assistant	1,020 per year	781 77		781 77
Gail Bowler	Engineering assistant	840 per year	70 00		70 00
R. J. Storm	Engineering assistant	1,200 per year	100 00		100 00
W. N. Dutcher	Engineering assistant			9 49	9 49
Geo. E. Barnard	Boatman	3 00 per day	432 00		432 00
Thomas Moran	Boatman	3 00 per day	135 00		135 00
Chas. Smith	Laborer	2 50 per day	442 50		442 50
Jas. Dygert	Laborer	2 50 per day	460 00		460 00
Patrick Hickey	Laborer	2 50 per day	100 00		100 00
Wm. McKinstry	Laborer	2 50 per day	7 50		7 50
Clark H. Norton	Laborer	2 50 per day	125 00		125 00
Hollenbeck	Gage reader	5 00 per month	60 00		60 00
D. D. Tompkins	Gage reader	5 00 per month	60 00		60 00
B. M. Wilcox	Gage reader	5 00 per month	60 00		60 00
Connor	Janitor	1,200 per year	150 00		150 00
Chas. W. Chase	Chauffeur	1,500 per year		9 15	9 15
Margaret Sheridan	Telephone operator	720 per year	90 00		90 00
Charles H. Osterhout	Fireman	900 per year	37 50		37 50
			$14,341 62	$1,118 47	$15,460 09

Construction of Barge Canal — Oswego Canal — (Continued)

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
	Incidental Expenses				
Stationery and printing				$11 50	
Fuel and light				63 63	
Postage				78 70	
Telephone and telegraph				270 34	
Miscellaneous				403 30	
					827 47
Total					$16,257 56

Construction of Barge Canal — Cayuga and Seneca Canal

Chapter 391, Laws of 1909, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
Guy Moulton	Division engineer	$4,800 per year	$900 00	$32 33	$932 33
H. C. Smith	Senior assistant engineer	2,820 per year	2,193 36	217 77	2,411 13
J. S. Popper	Caisson engineer	2,400 per year	595 06	3 46	598 52
Henry Goldmark	Consulting engineer	60 00 per day	240 00	56 09	296 09
E. E. Haskell	Consulting engineer	60 00 per day	180 00	13 62	193 62
H. C. Allen	Consulting engineer	60 00 per day	360 00	5 16	365 16
E. C. Moore	Consulting engineer	60 00 per day	180 00	20 97	200 97
Joseph Ripley	Consulting engineer	600 00 per month	96 77	27 40	124 17
I. S. Badger	Assistant engineer	2,340 per year	390 00	2 10	392 10
Carl L. Bannister	Assistant engineer	2,340 per year	1,036 61	2 48	1,039 09
R. W. Smith	Assistant engineer	2,208 per year	184 00		184 00
L. L. Hadley	Assistant engineer	2,340 per year	1,651 57	103 23	1,754 80
C. H. Swick	Assistant engineer	2,208 per year	374 13	4 55	378 68
H. N. Metzger	Assistant engineer	2,208 per year	47 48	24 51	71 99
M. L. Babcock	Junior assistant engineer	1,800 per year	1,491 94		1,491 94
L. W. Bentley	Junior assistant engineer	1,800 per year	1,290 00		1,290 00
E. L. Keeler	Junior assistant engineer	1,680 per year	134 53	27 68	162 21
Carl F. Hopstein	Junior assistant engineer	1,800 per year	24 19	36 87	61 06
H. L. Drake	Junior assistant engineer	1,560 per year	1,170 00		1,170 00
R. S. Mack	Junior assistant engineer	1,440 per year	1,098 00		1,098 00
J. H. Forth	Junior assistant engineer	1,200 per year	100 00		100 00
J. R. Tighe	Junior assistant engineer	1,200 per year	3 55	3 11	6 66
R. S. Pollard	Engineering assistant	840 per year	359 03		359 03
E. F. Allen	Laborer	2 50 per day	717 50		717 50
Wm. Philo	Laborer	2 50 per day	780 00		780 00
Jos. Dyson	Laborer	2 50 per day	495 00		495 00
W. E. Lerch	Laborer	2 50 per day	330 00		330 00
Jas. Thorne	Laborer	2 50 per day	462 50		462 50
R. H. Brown	Laborer	2 50 per day	45 00		45 00
T. C. McNicholas	Gage reader	7 00 per month	84 00		84 00
C. N. Bacon	Gage reader	5 00 per month	60 00		60 00
E. F. Garbus	Gage reader	5 00 per month	60 00		60 00
W. H. Lane	Gage reader	5 00 per month	60 00		60 00
C. D. Martin	Gage reader	5 00 per month	60 00		60 00
Timothy Regan	Gage reader	5 00 per month	60 00		60 00
Fred Wright	Gage reader	5 00 per month	60 00		60 00
Margaret Sheridan	Telephone operator	30 00 per month	85 00		85 00
C. W. Chase	Chauffeur	1,500 per year	115 00	14 20	129 20
Henry L. Bassett	Cashier	1,800 per year	150 00		150 00
John Connor	Janitor	600 00 per year	100 00		100 00
B. C. Smith	Livery			36 00	36 00
D. M. Kellogg	Livery			106 00	106 00
			$17,824 22	$737 52	$18,561 74
	Incidental Expenses				
Instruments and tools				$12 00	
Office rent				330 48	
Stationery and printing				18 89	
Fuel and light				12 32	
Postage				23 70	
Telephone and telegraph				188 26	
Miscellaneous				351 56	
					937 21
Total					$19,498 95

Construction of Barge Canal Terminals

Chapter 746, Laws of 1911, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
Guy Moulton	Division engineer	$4,800 per year	$900 00	$2 95	$902 95
L. C. Hulburd	Senior assistant engineer	3,060 per year	910 50	32 41	942 91
W. S. Morris	Estimate clerk	2,100 per year	300 00	....	300 00
L. J. Mulhauser	Stenographer	1,500 per year	577 28	....	577 28
H. L. Bassett	Cashier	1,800 per year	450 00	....	450 00
A. G. Card	Assistant engineer	2,580 per year	2,440 00	8 10	2,448 10
W. J. Durkan	Assistant engineer	2,580 per year	586 68	17 75	604 43
George H. Haley	Assistant engineer	2,580 per year	1,834 66	37 78	1,872 44
Lewis Bartlett	Assistant engineer	2,580 per year	169 45	2 20	171 65
Carl L. Bannister	Assistant engineer	2,580 per year	195 00	....	195 00
R. E. Swinney	Assistant engineer	2,340 per year	195 00	....	195 00
Roy Eazell	Junior assistant engineer	1,320 per year	330 00	....	330 00
Don A. Wilcox	Junior assistant engineer	1,680 per year	165 95	....	165 95
J. S. Bierhardt	Junior assistant engineer	1,440 per year	53 23	....	53 23
E. L. Keeler	Junior assistant engineer	1,800 per year	9 33	3 52	12 85
G. L. Stillman	Junior assistant engineer	1,560 per year	172 36	....	172 36
R. J. Storm	Junior assistant engineer	1,200 per year	75 38	....	75 38
A. J. Crowe, Jr	Junior assistant engineer	1,680 per year	4 33	1 35	5 68
L. H. Cait	Junior assistant engineer	1,560 per year	988 93	....	988 93
J. P. Mullen	Junior assistant engineer	1,320 per year	110 00	....	110 00
Carl F. Hepstein	Junior assistant engineer	1,800 per year	....	18 84	18 84
W. J. Bell	Junior assistant engineer	1,200 per year	1,107 74	....	1,107 74
J. E. Smith	Junior assistant engineer	1,800 per year	929 03	....	929 03
C. L. Fox	Junior assistant engineer	1,560 per year	893 07	....	893 07
H. A. Shafer	Junior assistant engineer	1,440 per year	23 87	....	23 87
J. P. Walsh	Junior assistant engineer	1,440 per year	42 58	....	42 58
Daniel Scanlon	Engineering assistant	1,020 per year	485 89	....	485 89
A. Moosbrugger	Engineering assistant	1,080 per year	1,045 00	....	1,045 00
R. J. Storm	Engineering assistant	1,200 per year	40 00	....	40 00
E. G. Warner	Engineering assistant	960 per year	40 00	....	40 02
F. Lutz	Engineering assistant	1,020 per year	204 22	....	204 20
L. A. Kavanagh	Engineering assistant	1,080 per year	23 71	....	23 71
W. N. Dutcher	Inspector of engineering works	1,560 per year	780 00	....	780 00
Patrick Ryan	Boatman	3 00 per day	951 00	....	951 00
Frank Ladd	Boatman	3 00 per day	345 00	....	345 00
Thomas Moran	Boatman	3 00 per day	474 00	....	474 00
R. D. Smith	Laborer	2 50 per day	782 50	....	782 50
Wm. McKinstry	Laborer	2 50 per day	397 50	....	397 50
Patrick Hickey	Laborer	2 50 per day	292 50	....	292 50
Chas. W. Chase	Chauffeur	1,500 per year	230 00	3 65	233 65
Margaret Sheridan	Telephone operator	600 per year	60 00	....	60 00
John Connor	Janitor	1,200 per year	100 00	....	100 00
Chas. W. Osterhout	Fireman	900 per year	94 36	....	94 36
			$19,810 05	$128 55	$19,938 60
	Incidental Expenses				
Office rent				$5 00	
Fuel and light				100 40	
Stationery and printing				43 50	
Postage				77 85	
Telephone and telegraph				190 40	
Express and freight				4 61	
Miscellaneous				1,004 29	
					1,426 05
Total					$21,364 65

Yorkville Bridge

Chapter 732, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
E. J. Berry	Senior assistant engineer	$3,300 per year	$58 68	$10 63	$69 31
D. R. Lee	Assistant engineer	2,340 per year	162 04	8 00	170 04
C. F. Hopstein	Junior assistant engineer	1,800 per year	19 35	7 30	26 65
E. L. Keeler	Junior assistant engineer	1,800 per year	13 55		13 55
D. D. Rogers	Junior assistant engineer	1,200 per year	30 00		30 00
Total			$283 62	$25 93	$309 55

Whitesboro Street Bridge, Rome

Chapter 753, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
E. J. Berry	Senior assistant engineer			$2 31	$2 31
Incidental Expenses					
Stationery and printing					$58 44
Total					$60 75

Lyons Falls Bridge

Chapter 246, Laws of 1913; chapters 699 and 728, Laws of 1915

NAME	Rank	Rate of compensation	Services	Travel	Total
D. R. Lee	Assistant engineer	$2,340 per year	$274 81	$12 42	$287 23
J. H. Forth	Junior assistant engineer	1,440 per year	100 00		100 00
W. S. Morris	Estimate clerk			5 05	5 05
			$374 81	$17 47	$392 28
Incidental Expenses					
Postage				$4 01	
Miscellaneous				2 67	6 68
Total					$398 96

Cowaselon Creek Improvement

Chapter 781, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
D. H. Judson	Assistant engineer	$2,340 per year	$276 99	$212 30	$489 29
M. J. Chryst	Junior assistant engineer	1,560 per year	195 70	....	195 70
J. T. Doris	Junior assistant engineer	1,200 per year	83 87	....	83 87
D. D. Rogers	Junior assistant engineer	1,200 per year	16 13	....	16 13
E. H. Carlson	Engineering assistant	840 per year	58 71	....	58 71
L. G. Hyle	Laborer	2 50 per day	32 50	....	32 50
			$663 90	$212 30	$663 90
	Incidental Expenses				
Livery				$92 00	
Miscellaneous				12 65	
					104 65
Total					$980 85

Limestone Creek Improvement

Chapter 751, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
E. J. Berry	Senior assistant engineer	$3,300 per year	$25 50	$1 00	$26 50
D. H. Judson	Assistant engineer	2,340 per year	77 16	3 60	80 76
C. F. Hopstein	Junior assistant engineer	1,800 per year	29 03	....	29 03
E. L. Keeler	Junior assistant engineer	1,800 per year	9 03	....	9 03
D. D. Rogers	Junior assistant engineer	1,200 per year	29 89	2 10	31 99
S. Liebowitz	Engineering assistant	840 per year	2 25	....	2 25
L. G. Hyle	Laborer	2 50 per day	2 50	....	2 50
Total	....	....	$175 36	$6 70	$182 06

Minetto Bridge

Chapter 716, Laws of 1915

NAME	Rank	Rate of compensation	Services	Travel	Total
E. M. Ellis	Assistant engineer	$2,580 per year	$626 95	$6 56	$633 51
A. T. Brown	Junior assistant engineer	1,320 per year	177 42	....	177 42
C. L. Fox	Junior assistant engineer	1,560 per year	320 51	....	320 51
Chas. Smith	Laborer	2 50 per day	340 00	....	340 00
			$1,464 88	$6 56	$1,471 44
	Incidental Expenses				
Livery				$3 00	
Fuel and light				1 13	
Telephone and telegraph				22 65	
Postage				2 24	
Miscellaneous				32 02	
					61 04
Total					$1,532 48

Canandaigua Lake Dredging

Chapter 756, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
E. J. Berry	Senior assistant engineer	$3,300 per year	$8 50	$12 77	$21 27
D. H. Judson	Assistant engineer	2,340 per year	41 55	16 72	58 27
C. F. Hopstein	Junior assistant engineer	1,800 per year	33 87	....	33 87
J. P. Walsh	Junior assistant engineer	1,440 per year	4 00	8 32	12 32
C. P. Plummer	Laborer	2 50 per day	2 50	....	2 50
			$90 42	$37 81	$128 23
Incidenta' Expenses					
Stationery and printing				$23 60	
Miscellaneous				57	
					24 17
Total					$152 40

Blue Line Surveys — Erie Canal

Chapter 646, Laws of 1916; chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
E. J. Berry	Senior assistant engineer	$3,300 per year	$787 08	$30 59	$817 67
R. K. Sheldon	Senior assistant engineer	2,580 per year	1,096 60	255 60	1,352 20
C. W. Costello	Senior assistant engineer	2,580 per year	735 97	2 10	738 07
D. R. Lee	Senior assistant engineer	2,340 per year	584 05	....	584 05
Harold Bills	Senior assistant engineer	1,980 per year	814 35	148 06	962 41
J. Otis Burt	Senior assistant engineer	1,980 per year	819 68	249 91	1,069 59
J. J. Ryan	Junior assistant engineer	1,800 per year	840 00	....	840 00
J. P. Walsh	Junior assistant engineer	1,440 per year	826 13	....	826 13
O. M. Peavy	Junior assistant engineer	1,200 per year	360 00	....	360 00
H. R. Horton	Junior assistant engineer	1,200 per year	306 45	....	306 45
D. D. Rogers	Junior assistant engineer	1,200 per year	149 78	....	149 78
H. W. Leshensky	Junior assistant engineer	1,200 per year	305 38	....	305 38
E. V. Jones	Engineering assistant	840 per year	255 84	....	255 84
R. R. Stevens	Engineering assistant	840 per year	121 33	....	121 33
S. Wolf	Engineering assistant	840 per year	83 55	....	83 55
J. T. Doris	Engineering assistant	840 per year	50 00	....	50 00
S. Liebowits	Engineering assistant	840 per year	109 90	....	109 90
H. F. Kinney	Engineering assistant	840 per year	265 55	....	265 55
E. H. Carlson	Engineering assistant	840 per year	100 33	....	100 33
E. D. Pieri	Engineering assistant	840 per year	107 26	....	107 26
C. M. Guild	Engineering assistant	840 per year	105 00	....	105 00
E. H. Hall	Engineering assistant	840 per year	105 00	....	105 00
I. N. Steigman	Engineering assistant	840 per year	40 65	....	40 65
M. M. Seidman	Engineering assistant	840 per year	215 87	....	215 87
Gail Bowler	Engineering assistant	840 per year	149 33	....	149 33
C. P. Plummer	Laborer	2 50 per day	267 50	....	267 50
G. W. Moulton	Laborer	2 50 per day	27 50	....	27 50
L. G. Hyde	Laborer	2 50 per day	40 00	....	40 00
			$9,670 08	$686 26	$10,356 34
Incidental Expenses					
Livery				$763 00	
Postage				52 54	
Telephone and telegraph				1 05	
Miscellaneous				639 90	
					1,456 49
Total					$11,812 83

Blue Line Surveys — Oswego Canal

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
E. J. Berry	Senior assistant engineer	$3,300 per year	$32 90		$32 90
R. K. Sheldon	Senior assistant engineer	2,580 per year	488 23	$79 00	567 23
C. W. Costello	Senior assistant engineer	2,580 per year	100 64		100 64
D. R. Lee	Senior assistant engineer	2,340 per year	100 90		100 90
J. J. Ryan	Junior assistant engineer	1,800 per year	352 26		352 26
J. P. Walsh	Junior assistant engineer	1,440 per year	133 55		133 55
E. V. Jones	Engineering assistant	840 per year	6 77		6 77
Gail Bowler	Engineering assistant	840 per year	9 04		9 04
E. D. Pieri	Engineering assistant	840 per year	11 29		11 29
C. P. Plummer	Laborer	2 50 per day	152 50		152 50
G. W. Moulton	Laborer	2 50 per day	32 50		32 50
			$1,420 58	$79 00	$1,499 58
	Incidental Expenses				
Livery				$15 00	
Miscellaneous				60	
					15 60
Total					$1,515 18

Surveys for State Court of Claims — Erie Canal

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
E. J. Berry	Senior assistant engineer	$3,300 per year	$442 24	$22 33	$464 57
R. K. Sheldon	Senior assistant engineer	2,580 per year	35 84	5 25	41 09
D. H. Judson	Senior assistant engineer	2,208 per year	286 88	29 02	315 90
G. H. Thomas	Junior assistant engineer	1,800 per year	29 35	4 74	34 09
C. F. Hopstein	Junior assistant engineer	1,800 per year	249 94	18 96	268 90
J. J. Ryan	Junior assistant engineer	1,800 per year	25 00		25 00
J. T. Doris	Junior assistant engineer	1,200 per year	22 58		22 58
M. J. Chryst	Junior assistant engineer	1,560 per year	181 72		181 72
O. M. Peavy	Junior assistant engineer	1,200 per year	3 22		3 22
E. H. Carlson	Engineering assistant	840 per year	44 19		44 19
E. D. Pieri	Engineering assistant	840 per year	11 66		11 66
S. Liebowitz	Engineering assistant	840 per year	9 19		9 19
M. M. Seidman	Engineering assistant	840 per year	29 35		29 35
L. E. Jenkins	Laborer	2 50 per day	32 50		32 50
			$1,403 66	$80 30	$1,483 96
	Incidental Expenses				
Livery				$78 00	
Postage				14 50	
Miscellaneous				11 25	
					103 75
Total					$1,587 71

Surveys for State Court of Claims — Black River Canal

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
E. J. Berry	Senior assistant engineer	$3,300 per year	$33 18	$2 76	$35 94
R. K. Sheldon	Senior assistant engineer	2,580 per year	14 33	16 75	31 08
D. H. Judson	Senior assistant engineer	2,208 per year	42 34	68 07	110 41
C. F. Hopstein	Junior assistant engineer	1,800 per year	34 52	....	34 52
J. J. Ryan	Junior assistant engineer	1,800 per year	10 00	....	10 00
M. J. Chryst	Junior assistant engineer	1,560 per year	29 91	....	29 91
M. M. Seidman	Engineering assistant	840 per year	6 78	....	6 78
E. V. Jones	Engineering assistant	840 per year	9 33	....	9 33
E. D. Pieri	Engineering assistant	840 per year	4 67	....	4 67
			$185 06	$87 58	$272 64
Incidental Expenses					
Livery				$28 00	
Miscellaneous				37	
					28 37
Total					$301 01

Survey for Barge Canal Extension to Auburn

Chapter 376, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
H. C. Smith	Senior assistant engineer	$2,820 per year	$626 64	$29 81	$656 45
H. H. Brown	Assistant engineer	2,580 per year	1,860 54	181 96	2,042 50
L. L. Hadley	Assistant engineer	2,130 per year	567 43	....	567 43
G. L. Stillman	Junior assistant engineer	1,560 per year	363 65	....	380 65
C. V. O'Malley	Junior assistant engineer	1,680 per year	346 77	....	346 77
J. S. Bierhardt	Junior assistant engineer	1,440 per year	1,044 77	....	1,044 77
H. L. DuBois	Junior assistant engineer	1,440 per year	1,042 06	....	1,042 06
F. S. Corey	Junior assistant engineer	1,200 per year	799 35	....	799 35
R. M. R. Howard	Junior assistant engineer	1,110 per year	399 24	....	399 24
P. Maroney	Engineering assistant	840 per year	220 98	....	220 93
T. M. Strohmenger	Engineering assistant	840 per year	178 91	....	178 91
C. W. Higgins	Laborer	2 50 per day	120 00	....	120 00
T. M. Strohmenger	Laborer	2 50 per day	102 50	....	102 50
P. Maroney	Laborer	2 50 per day	67 50	....	67 50
			$7,737 31	$211 77	$7,949 11
Incidental Expenses					
Stationery and printing				$0 40	
Office rent				52 50	
Fuel and light				37 93	
Livery				93 00	
Postage				4 31	
Telephone and telegraph				60	
Miscellaneous				221 33	
					410 10
Total					$8,359 21

SUMMARY

The foregoing tables are summarized as follows:

Ordinary Repairs to Canals

1.	Erie canal, chapter 181, Laws of 1917	$9,633 69
2.	Black River canal, chapter 181, Laws of 1917	331 19

Construction of Barge Canal

3.	Erie canal, chapter 147, Laws of 1903, and amendatory laws	80,161 51
4.	Oswego canal, chapter 147, Laws of 1903, and amendatory laws	16,287 56
5.	Cayuga and Seneca canal, chapter 391, Laws of 1909, and amendatory laws	19,498 95

Construction of Barge Canal Terminals

6.	Barge canal terminals, chapter 746, Laws of 1911, and amendatory laws	21,364 65

Special Work

7.	Yorkville bridge, chapter 752, Laws of 1917	309 55
8.	Whitesboro street bridge, Rome, chapter 753, Laws of 1917	60 75
9.	Lyons Falls bridge, chapter 246, Laws of 1913; chapters 699 and 728, Laws of 1915	398 96
10.	Cowaselon creek improvement, chapter 781, Laws of 1917	980 85
11.	Limestone creek improvement, chapter 751, Laws of 1917	182 06
12.	Minetto bridge, chapter 716, Laws of 1915	1,532 48
13.	Canandaigua lake dredging, chapter 756, Laws of 1917	152 40

Special Surveys

14.	Blue line surveys, Erie canal, chapter 646, Laws of 1916; chapter 181, Laws of 1917	11,812 83
15.	Blue line surveys, Oswego canal, chapter 181, Laws of 1917	1,515 18
16.	Surveys for State Court of Claims, Erie canal, chapter 181, Laws of 1917	1,587 71
17.	Surveys for State Court of Claims, Black River canal, chapter 181, Laws of 1917	301 01
18.	Survey for Barge canal extension to Auburn, chapter 376, Laws of 1917	8,359 21
	Total	$174,470 54

REPORT

OF THE

DIVISION ENGINEER

OF THE

WESTERN DIVISION

For the Fiscal Year Ended June 30, 1918

WESTERN DIVISION

STATE OF NEW YORK
DEPARTMENT OF STATE ENGINEER AND SURVEYOR
WESTERN DIVISION

ROCHESTER, N. Y., *July* 1, 1918.

Hon. FRANK M. WILLIAMS, *State Engineer and Surveyor, Albany, N. Y.:*

Sir.— I have the honor of submitting herewith my report for the fiscal year ended June 30, 1918, as Division Engineer of the Western Division.

BARGE CANAL CONSTRUCTION

The principal work of the year has been directed towards one important objective, namely, the opening of the Barge canal system in its enlarged dimensions for the season of 1918, and it is a matter for congratulation that in spite of obstacles which seemed at one time almost insuperable this object was accomplished, and on May 15 the Western Division, where the last heavy work remained to be done, was officially opened for Barge canal navigation simultaneously with the opening of the entire system throughout the state.

Just prior to this event, on the tenth of May, the State Engineer and the Special Deputy State Engineer, together with a small group composed of members of the engineering staff and a few prominent citizens, assembled in Genesee Valley park, Rochester, where the ceremony of removing the last shovelful of earth, which prevented the waters of the Genesee river from entering the canal and which constituted the last barrier to navigation, was performed by the State Engineer himself to the accompaniment of numerous whistles and some little celebration in acknowledgment of the importance of the event.

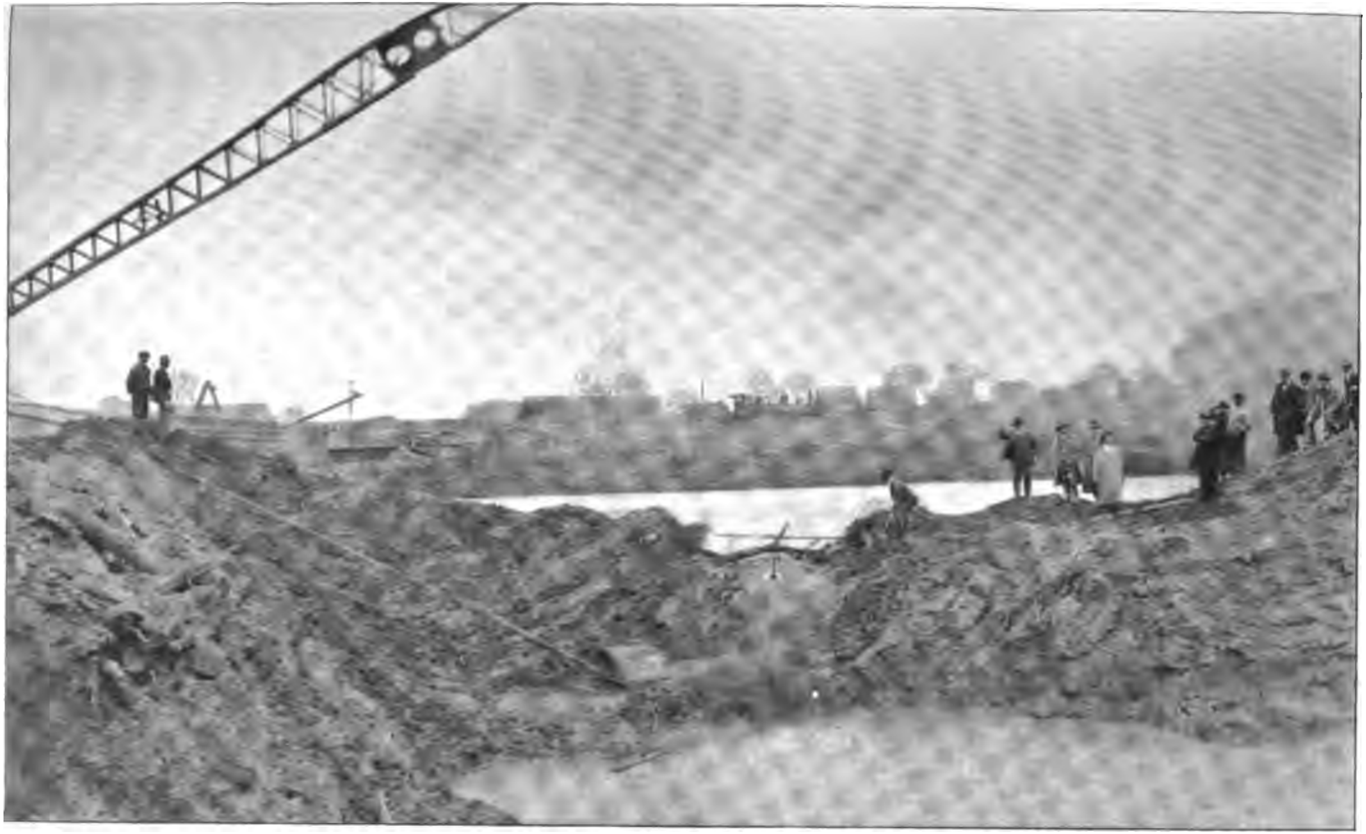
On the evening of the fifteenth the engineers and contractors of this Division to the number of nearly a hundred gathered at the Hotel Rochester to celebrate the event of the day and the year. As toastmaster I had the pleasure of thanking the men from the Division, who had creditably performed their services.

As the event of the evening I was privileged to introduce the guest of honor, the State Engineer, and at the same time to present to him the shovel (altered in appearance by varnish and nickel-plating) with which he had opened the last link in the canal a few days before. As I consider it is to his efforts more than to those of anyone else that the successful outcome of our work should be ascribed, I believe it is not inappropriate for me to emphasize the State Engineer's remarks, and I therefore quote the following paragraphs from the record which appeared in the newspapers the next morning:

"Probably there is no man in the city of Rochester tonight outside of this room — mark the exception — who has greater cause for gratification than I. At a time when it is almost providential in its occurrence the Department of the State Engineer has been able to throw open to public use a route of transportation in that part of the country where it is most needed.

"The war has been in progress a little more than one year, so far as our participation in it is concerned. We are told that food will win the war, that money will win the war, that men will win the war, and each of these is a factor without which we cannot win, but underlying everything else as a prime necessity is transportation.

"Every true-hearted American is anxious to do his part in making certain that 'liberty shall not perish from off the earth,' but this duty is not entirely taken up with the handling of bayonets and bombs and airplanes and artillery. You men who have strained your nerves and worked your hardest to get this canal open, so that it might carry the necessities of war, have rendered to your country a service whose effect on the decision to be reached in Europe may outweigh the work of an entire army corps. Let not one of you regard lightly what he has done or the part he has played. Engineers and contractors alike, you have served the great cause perhaps better than you know.



REMOVAL OF DIKE ON THE EAST BANK OF THE GENESEE RIVER

The State Engineer opened this dike by digging a ditch through it. An excavator completed the removal. A half hour later a similar performance on the west bank opened a through channel across the state.

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"I do not know what caused this war — commercial ambition, lack of territory, what not — but I do know that what we have completed today will most certainly be a factor in speeding the war's conclusion, and that after a victorious peace the canal will take the place it was originally designed to occupy — a successful and economical means for peaceful transportation of the products of the industry of the people of the great commercial state of New York."

On this occasion, as well as at other times, whenever the opportunity has offered, attention was called to the roster of men who have entered the military service of the country since the declaration of war. The photographs of a number of them in uniform were thrown upon the screen and the "Honor Roll," which usually occupies a conspicuous position in the Western Division office, was placed above the toastmaster's seat and decorated with flags and bunting. The names are as follows (September 1, 1918):

O. L. Burdett
C. E. Heydt
B. S. Davenport
G. H. Yerkes
Powell Wall
John Hano
E. J. Moran
P. M. Howe
J. R. Tighe
E. J. Bullis
F. M. Sisson
L. P. M. Gaylord
John J. Phalan
J. F. Larney
Allen Mattison
S. E. Whitney
J. F. Egan
T. L. Curtin
E. E. R. Dornbach
F. S. Barclay
J. F. Cullen
J. E. Morrell
E. M. Birdsall
H. R. Topping
Edwin Krapf
J. F. Gilbert
H. F. Kinney
E. A. Close
Ernest Budlong
Raymond J. Golding
Walter R. Miller
Elmer R. Stoll
W. F. Lysett
William F. Burke
Clarence M. Colony
John J. Dunne
Michael Kovar
W. D. Gartland
W. W. Redfern
Solomon Leibowitz
W. J. Zabel
L. S. Hulburd
C. V. O'Malley
R. D. Cameron

Review of Conditions

Although the canal was thrown open for boats of Barge canal dimensions on May 15, there were several places where much work still remained to be done — places where only a 50-foot bottom width of channel had been excavated, localities where extensive wash-wall protection remained to be placed, bridges and other structures which were unfinished, and terminal docks which were by no means complete. However, with the obstacles of increased cost and scarcity of materials and labor and the restrictions by the Federal Government to contend with, the

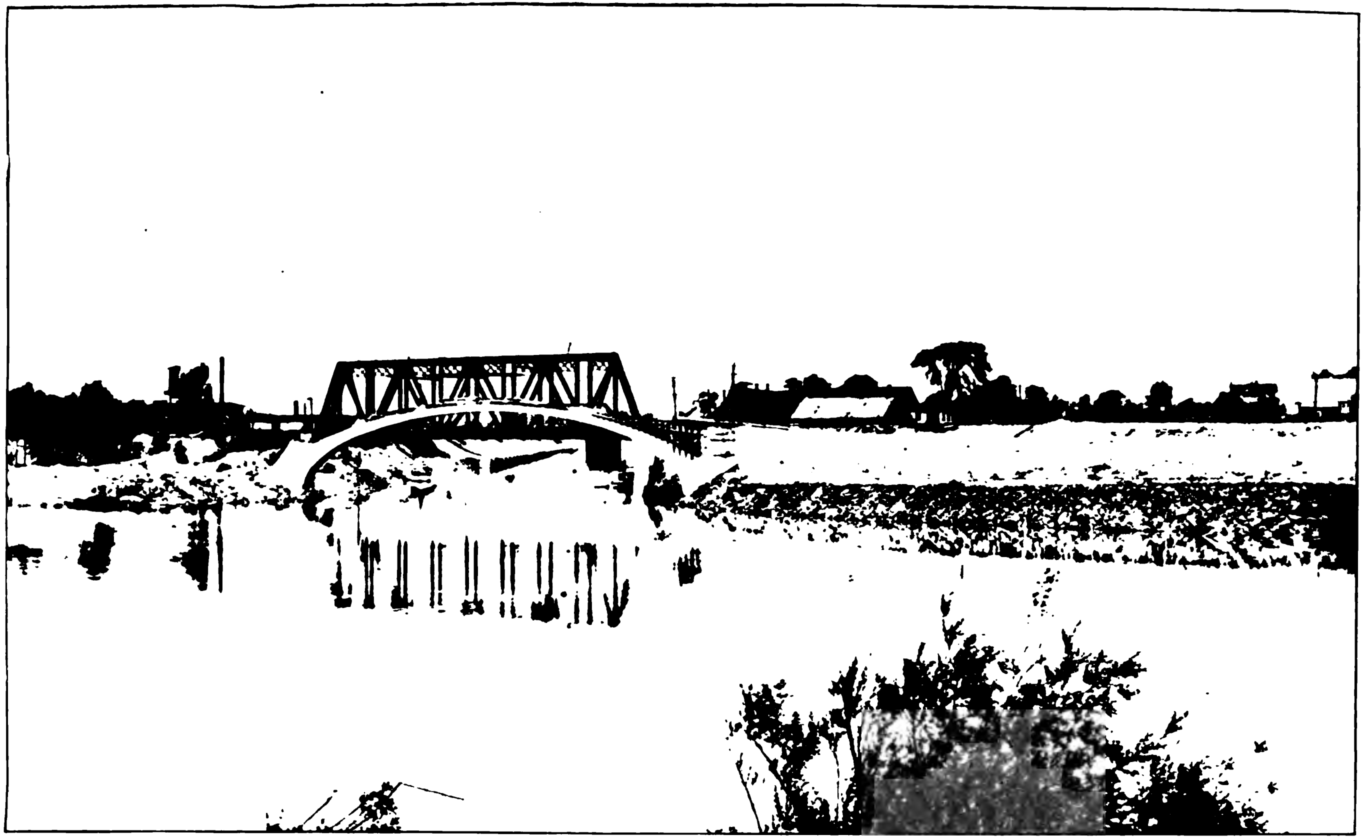
Department had to be unremitting in its efforts to procure even this degree of completion. How unremitting were these efforts the following outline will serve to indicate:

On contract No. 47-A, between Lyons and Clyde, the extensive work of dredging had been taken over during the preceding year and was progressed energetically by State forces. The total excavation removed during the twelve months amounted to 950,000 cubic yards, much of which was difficult material and some of it rock, submerged under the waters of the Clyde river. The work between Newark and Lyons involved the closing of several canal crossings and excavation beneath railroad bridges, which was pushed vigorously only by the utmost efforts and constant attention of the Department.

It became evident in the early spring that the work from Fairport to King's Bend, west of Pittsford, would not be completed with anything like the existing rate of progress, and this work was therefore taken over and a supervisor appointed by the Superintendent of Public Works. Forces and plant were assembled from every possible source and a channel of the width necessary to pass the new barges was excavated throughout the length of this contract, and also the Irondequoit concrete trough was completed according to a permanent design, both in time for the opening of navigation. A maximum of 730 men and 65 teams were in service here during the height of activities; also five steam-shovels and a corresponding amount of other equipment were utilized.

On the contract extending from King's Bend to Genesee Valley park it was necessary to apply vigorous methods, and only a 50-foot channel could be obtained through the heavy cuts at the west end.

On the park section, which was included with the Rochester harbor contract, orders were given to transfer the excavating machines on the river work to the main line in the park and to concentrate efforts there, leaving the harbor to be finished at a subsequent date. Under an extra work order a temporary movable dam was constructed across the river, to serve the purpose of maintaining the pool in the Barge canal until such time as the permanent steel structure could be erected three miles below, in the city of Rochester.



WEST BANK OF THE GENESEE RIVER AT THE BARGE CANAL CROSSING

The Barge canal crosses the Genesee in a pool formed by a dam. The canal channel to the west is here shown. The structure at the entrance is a foot-bridge, which is a part of the Genesee Valley park system.

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The contract through the rock cut west of the Genesee river had been progressed with commendable speed by the Woolsey Construction Company, subcontractor for the Walsh Construction Company, and this contract was practically completed at the time navigation was opened. At the junction of the old and new canals at South Greece, west of Rochester, it had been determined earlier in the year to build a small junction lock, so as to admit boats to the stretch of old canal passing through the center of that city, which was then to be maintained temporarily for service to Rochester. This contract had to be expedited by supplying to the contractor a part of the forces assembled by the State for work on the Pittsford section and with that assistance it was possible to complete the lock and the vital part of the contract work in time for the opening of navigation.

At Lockport the Adams street lift-bridge was in readiness, but great difficulty was experienced in the dredging of Tonawanda creek because of an extensive slide which carried several thousand yards of material into the prism only a short time before the date set for the opening of navigation. However, a 50-foot channel was obtained through this section. In spite of unexpectedly hard material encountered in excavating the stretch of prism at Pendleton and at Sulphur Springs, the work was completed as planned, both here and also through the city of Tonawanda, where the new contract — No. 83 — was located. A temporary bridge was built at Webster street, Tonawanda, to permit the passage of barges until such time as a new bascule bridge can be completed.

Although it has been difficult in many cases to get the necessary progress on the part of the contractors, most of them have responded with creditable energy and in all cases the peculiar difficulties under which they labored explain the frequent delays and lack of progress. This response justifies me in commending warmly those who held out and made it possible to open the canal at the appointed time. Since the passage of the Walters bill, which provides for giving due consideration to those contractors who assumed their contractual obligations before the declaration of war and who have been beset with the unusual inflation in prices and scarcity of labor, the Canal Board has announced its intention of extending relief to these contractors. It is probable that for that purpose extensive readjustment of existing contracts will be made and also that reimbursement will be granted where there has been a loss in carrying out the work.

Railroad Crossings

The problem of railroad crossings, which has been so difficult of solution during past years, was attacked insistently when it was first determined to open the canals to their full capacity this season, and one by one negotiations with the various railroads have been consummated.

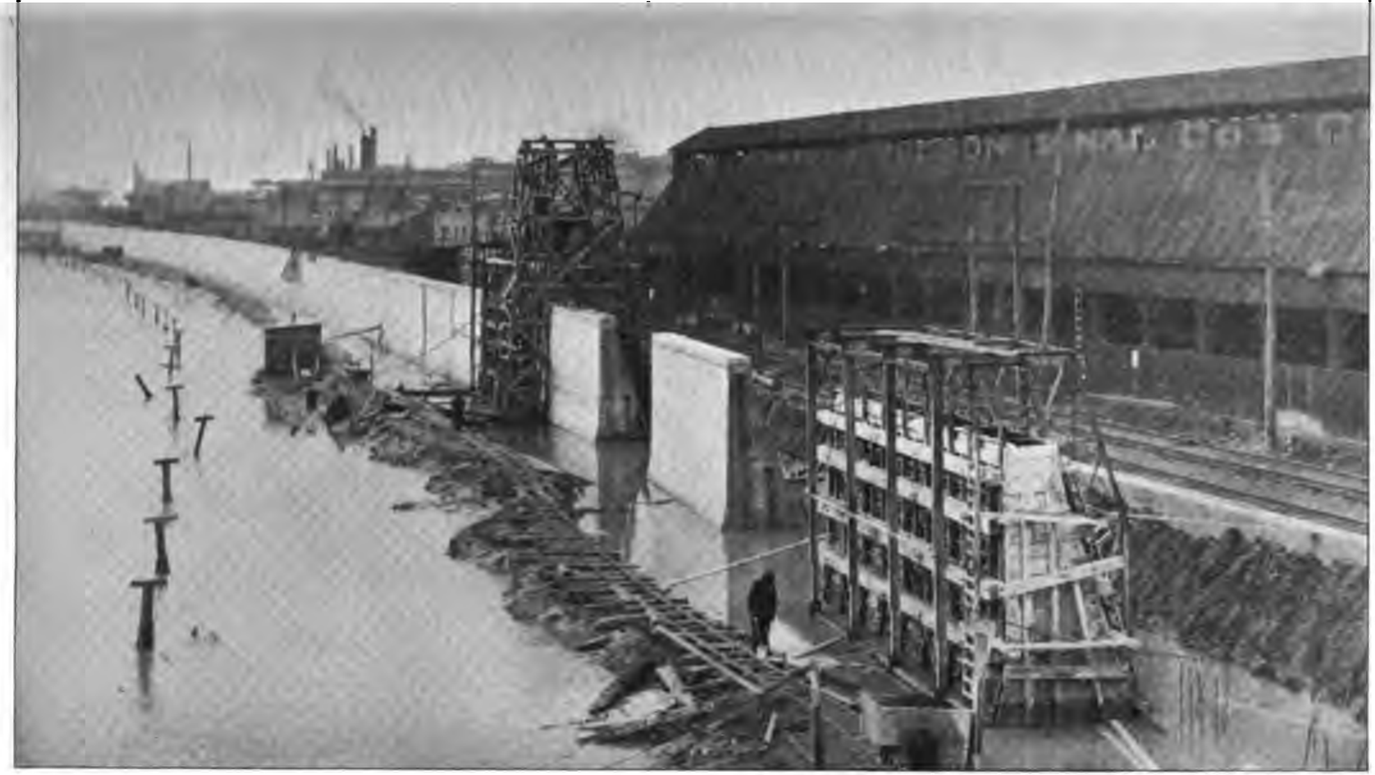
The main line crossing of the New York Central east of Lyons, which had been greatly simplified by inserting a Taintor gate in the dam at lock No. 26, Clyde, was constructed largely during the year. It has a width sufficient for six tracks.

The West Shore and Auburn railroad crossings near Pittsford involved new structures throughout, but progress was sufficiently rapid on these bridges to complete them well before the time set for the opening of navigation. The same is true of the Lehigh Valley crossing south of Rochester, and this bridge is being used to carry the detour tracks of the Erie railroad (which occupies a roadbed immediately adjacent on the west) until such time as the superstructure of that bridge can be erected, its abutments having been carried above pool level prior to the filling of the canal.

Although the Pennsylvania spur line bridge west of the Genesee was completed in good time, it became apparent that difficulties in the steel market would prevent shipment of the main line Pennsylvania superstructure in due season. The abutments were therefore completed and arrangements made with the railroad company to divert its traffic to Rochester by way of the B., R. & P. tracks at the junction of the two roads south of Rochester, the expectation being that the steelwork could be placed during the summer and traffic resumed over the Pennsylvania lines.

The new Erie bridge over the Genesee river was also completed early in the season.

A relocation of the railroad lines at Tonawanda will eliminate the Main and Webster street bridge. The branch which has



Wall on West Side of the Genesee River in Rochester

High walls for a considerable distance on both sides of the Genesee confine the river and prevent flood damage.

used this bridge, after making a rather long detour, will reach the new bascule bridge which is being built for the Batavia branch. This new bridge will then carry both roads. While this new construction has been in progress, temporary spans, raised to give sufficient clearance, have been in use.

SPECIAL APPROPRIATIONS

Ellicott Creek Improvement

(Chapter 624, Laws of 1913; chapter 728, Laws of 1915; chapters 181 and 760, Laws of 1917.)

Contractor, J. W. Hennessy, Inc., Buffalo, N. Y.
Date of contract, April 18, 1918.
Engineer in charge, R. W. Cady, Assistant Engineer.

Appropriations	$135,000.00
Engineer's preliminary estimate	86,803.25
Contractor's bid	86,885.30

This contract is for completing the improvement of Ellicott creek. The first contract for this work included some other work and on December 10, 1914, was awarded to F. L. Cohen of Buffalo, N. Y., who during December of 1915 had completed nearly all of the work under his contract with the exception of the prism excavation. Because of failure to progress the work, the Superintendent of Public Works canceled the contract on June 20, 1916. This work was done under chapter 624, Laws of 1914, which made an appropriation of $80,000.00 for the purpose, and also under chapter 728, Laws of 1915, which reappropriated the unexpended balance of this amount.

An attempt was made to relet the work in November, 1916, but the bids received were in excess of the amount of the appropriation then available. The Legislature of 1917, by chapter 181, reappropriated the unexpended balance, $33,711.38, and by chapter 760 appropriated an additional sum of $55,000.00. New plans and estimate were then prepared and the contract was readvertised and awarded.

The present contractor has been dredging the prism with a small floating clam-shell outfit, but has made little progress. The channel has been deepened to 6½ feet, so that old canal boats can navigate it with the water-surface at the elevation of the new Barge canal pool. None of the excavated material has been finally disposed of and, therefore, no payments have been made for this work.

Negotiations have been in progress with the Erie and International Railway companies pertaining to the necessary alterations to their trestle bridges across this creek, but it may be found difficult to undertake this work with the funds available from this appropriation after payment for the other work has been made.

Concrete Culvert Over Eighteen-Mile Creek

(Chapters 181 and 626, Laws of 1917)

Contractor, Russell R. Ames, Inc., Rochester, N. Y.
Date of contract, January 30, 1918.

Amount of appropriation	$12,500.00
Engineer's preliminary estimate	10,805.00
Contractor's bid	11,236.00
Value of work done to June 30, 1918	340.00

This contract is for constructing a concrete culvert, or sewer, along Eighteen-Mile creek, Lockport, between Pound street and Cleveland place, a distance of approximately 940 feet, and also for constructing the necessary head-walls and appurtenances at the two extremeties. The clearing on this work has been nearly finished, but nothing else has been done.

Chadakoin River Improvement

(Chapter 758, Laws of 1913; chapter 728, Laws of 1915; chapter 181, Laws of 1917)

Contractor, George L. Maltby, Jamestown, N. Y.
Date of contract, March 23, 1916.

Amount of appropriation	$100,000.00
Engineer's preliminary estimate	89,252.25
Contractor's bid	92,074.25
Value of work done to June 30, 1918	8,570.00

Very little work has been done on this contract during the year, and on June 18, 1918, the Superintendent of Public Works, on account of the slow progress, suspended the work. The headgates of the raceway are completed, also one abutment of the new Warner dam. The coffer-dam is in place for building the rest of the structure and water is being passed around to the south by a wooden flume. Considerable excavation has been done just below Fairmount avenue bridge.

Hertel Avenue Bridge Improvement

(Chapter 761, Laws of 1917)

Contractor, Lupfer & Remick.
Date of contract, March 15, 1918.
Engineer in charge, E. H. Anderson, Assistant Engineer.

Amount of appropriation	$30,000.00
Engineer's preliminary estimate	$27,937.50
Contractor's bid	27,967.20
Value of work done to June 30, 1918	5,750.00

Work was started this spring, and excavation has been finished for the two abutments, most of the piles are driven and concrete work has been started on the west abutment. The excavated material was used in making the fill for the west approach.

BLUE LINE SURVEY

(Chapter 181, Laws of 1917)

Very little work of surveying and mapping the canal blue line was done on this Division during the current year, as it was determined to finish certain work under way in the other divisions. There are, however, duly certified maps on file, based on the recent surveys and covering sections east of Lyons and the entire Rochester cut-off. Also work of surveying and mapping has progressed to quite an extent in Buffalo and at some other points in the Division.

COURT OF CLAIMS SURVEYS

(Chapter 181, Laws of 1917)

The usual work of surveying and mapping in connection with the work of the Court of Claims has been performed and has involved a very considerable amount of time and effort, especially during those periods when the Court of Claims was in session on local cases. Extensive surveys and maps have been made covering lands along the Clyde river and the Oak Orchard feeder. The appropriation for this work is not sufficient from year to year to cover the requirements.

MONUMENTING CANAL LANDS

A small amount of work has been done in the monumenting of the new right of way of the Barge canal and in progressing the set of maps on which it is planned to show both this right of way and all the structures of the Barge canal throughout the length of the Division.

SURVEYS FOR GRANTS OF LAND UNDER WATER AT BUFFALO

Several surveys and maps have been made in connection with additional applications for land under the waters of Lake Erie at Buffalo, and the Niagara river at Tonawanda and North Tonawanda.

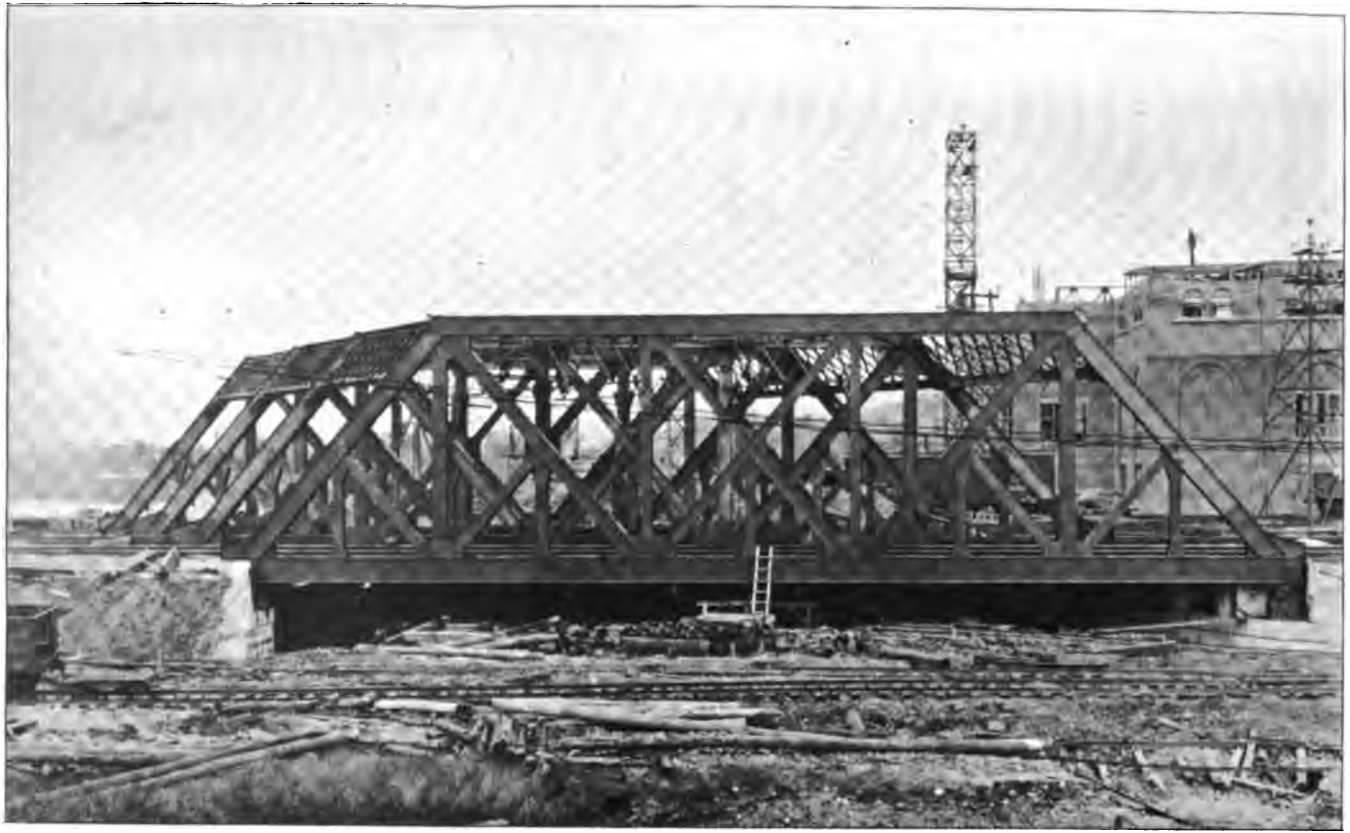
BARGE CANAL AND TERMINAL ORGANIZATION

The Barge canal and terminal construction, which has constituted by far the largest part of my work, has been directed from my headquarters office at Rochester and four residencies, organized as follows:

Residency No. 8, covering Wayne county, L. S. Hulburd, Senior Assistant Engineer, in charge, with headquarters at Lyons.

Residency No. 9, portion covering Monroe county with the exception of the Rochester harbor and vicinity, A. E. Steere, Senior Assistant Engineer, in charge, with headquarters at Rochester.

Residency No. 9, portion covering Rochester harbor and the section of main line canal through Genesee Valley park, A. R.



New York Central (Main Line) Bridge across the Barge Canal East of Lyons

After the bridge had been erected a dredge completed the canal channel under the structure. The bridge is of heavy construction and carries six tracks.

Morse, Senior Assistant Engineer, in charge, with headquarters at Rochester.

Residencies Nos. 10 and 11, covering Orleans, Niagara and Erie counties, B. E. Failing, Senior Assistant Engineer, in charge, with headquarters at Buffalo.

Reports of these engineers, giving detailed statements of work under their charge, follow.

ERIE CANAL, RESIDENCY NO. 8

Senior Assistant Engineer L. S. Hulburd reports:

Reports are given on the following contracts: Contracts Nos. 84, 141, 148, 154, 159 and 164, parts of Nos. 172 and 173, terminal contract No. 31 and parts of terminal contracts Nos. 106 and 211, and also on the work of finishing contract No. 47-A and the railroad crossings in this residency.

Contract No. 47-A—*Special Agreement*

Contract No. 47-A, which was for completing the construction of the canal from the town line about five miles southeast of the village of Clyde to a point near the New York Central railroad crossing at Lyons, was suspended by the Canal Board on March 21, 1917. On March 27, the Superintendent of Public Works proceeded to complete the work, employing the Sherman-Stalter Co. with its plant and force for the purpose. Payments on this work during the year amount to $703,540, total to date, $911,107.

F. W. Madigan, Assistant Engineer, is in charge.

Dredging operations were continued during the winter months and the prism excavation was completed on May 23, 1918.

At the through cut one mile below lock No. 26 and above the West Shore bridge at Lyons, well drills were used and the hard material was loosened by blasting. For part of the distance between Creagers bridge and the "Y" bridge the drilling was done from a drill-boat and the hard material was blasted.

The Taintor gate at lock No. 26 was erected during the summer and fall of 1917 and the cribs above lock No. 26 were built.

The retaining wall along the West Shore railroad was completed. The excavation for this wall was done with a dipper-dredge and a clam-shell excavator. Rapid progress was made in placing the concrete and 490 linear feet of wall was built between April 1 and June 30. This wall is 18 feet high and was built in 13 feet of water. A floating concrete plant and a gravel scow were used, the forms were built in panels 21 feet long with an outside framework of steel sheet-piling and the concrete was placed under water with a tremie.

Contract No. 84

This contract is for constructing portions of a viaduct over the Clyde river and railroad tracks at Clyde. It was awarded to Lupfer & Remick, being signed on March 9, 1917. Construction work began March 2, 1917. The engineer's preliminary estimate was $83,948.50, the contractor's bid, $80,661.80. The contract price as modified by alterations Nos. 1, 2 and 3 is $83,078.66. The value of work done during the year is $19,780. total done to date, $37,300. The amount paid on extra work orders during the year is $20,000.00, total to date, the same.

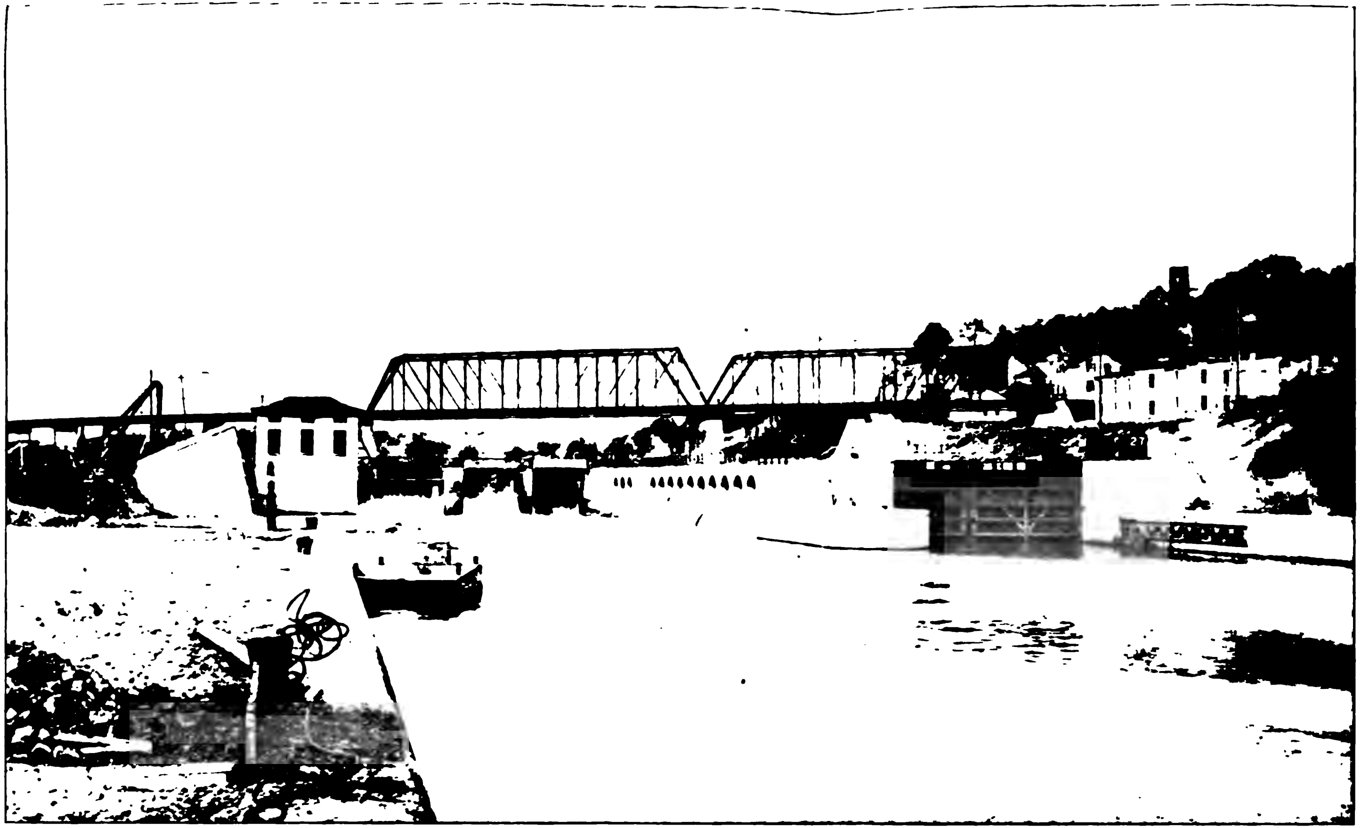
J. A. Sloat, Junior Assistant Engineer, is in charge.

Alteration No. 3, approved by the Canal Board October 31, 1917, provides for substituting reinforced concrete for cast-iron pipe under the north approach to the bridge. It decreases the contract price by $798.00.

An extra work order dated July 31, 1917, provides for reconstructing the stone sewer encountered in the foundation of the north abutment. The final account, amounting to $2,000.00, was approved by the Canal Board September 5, 1917.

The fourth pier and the north abutment were built, completing the second-class concrete on this contract.

The backfill for the south abutment was partially done in 1917 and completed in May, 1918. Also the grading of the road leading to the south approach was completed. The drainage culvert in the old canal was built and about 90 per cent of the fill in the north approach was placed.



LOCK NO. 27, AT LYONS

The view shows a second Taintor gate (constructed under contract No. 154) and the abutments for Leach street bridge (being built under contract No. 148). This lock stands at the head of the Clyde river, Ganargua creek and Canandaigua outlet uniting at its side to form the river.

The steel for the superstructure has been delivered and about 231 feet of the viaduct over the N. Y. Central tracks has been placed and bolted.

Contract No. 148

This contract is for constructing the substructure, superstructure and approaches of a highway bridge across lock 27 and the Clyde river at Leach street, Lyons. It was awarded to Lathrop, Shea & Henwood Co., being signed on September 5, 1917. The engineer's preliminary estimate was $65,810.60, the contractor's bid, $66,986.20. The value of work done to date is $7,270.

F. W. Madigan, Assistant Engineer, is in charge.

A little work was done on erecting plant in the fall of 1917, but construction work was not begun until June, 1918, when the excavation for the north abutment was finished and about three-fourths of the concrete for this abutment was placed.

A coffer-dam for the south abutment was built and excavation started.

Contract No. 154

This contract is for constructing an additional Taintor gate in the dam at lock No. 27, Lyons. It was awarded to Lupfer & Remick, being signed on April 7, 1917. Construction work began May 1, 1917. The engineer's preliminary estimate was $7,802.70, the contractor's bid, $8,582.50. The value of work done during the year is $8,409. The work was accepted June 26, 1918, and the final account, amounting to $8,409.30, was approved by the Canal Board November 13, 1918.

F. W. Madigan, Assistant Engineer, was in charge.

The concrete pier was completed, the section of the old spillway removed and the steel Taintor gate erected.

The contract was completed in May, 1918.

Contract No. 164

This contract is for completing the construction of the canal at certain locations between Lyons and Newark and for constructing a retaining dam at Macedon. It was awarded to Lathrop, Shea & Henwood Co., being signed on October 30, 1917. Construction work began November 8, 1917. The engineer's preliminary estimate was $124,313.00, the contractor's bid, $159,848.25. Excess steel sheet-piling to the value of $5,750.00 has been authorized by the Canal Board. The value of work done to date is $81,980.

W. W. Brown, Assistant Engineer, is in charge.

An extra work order dated December 1, 1917, provides for installing a sluice-gate in the spillway above the lock, to provide drainage for the level above lock No. 28-A, at a lump price of $1,500.00.

An extra work order dated April 26, 1918, provides for furnishing and driving steel sheet-piling across an opening in the bank east of the old poorhouse lock on the north side of the canal, payment to be on the basis of cost plus 15 per cent.

An extra work order dated May 24, 1918, provides for stopping seepage and reinforcing the banks at several places as directed by the engineer, payment to be on the basis of cost plus 15 per cent.

A large steam-shovel began operating in November, 1917, and worked through the winter, completing the prism above lock No. 28-A and nearly finishing the canal crossing above the poorhouse. One small revolving shovel was operated during the winter at the canal crossing east of the New York Central bridge, and a third shovel, of the revolving type, was started in March at the West Shore bridge.

In order to provide a navigation channel by the fifteenth of May, the shovels were removed and a suction dredge was brought to the contract on May 9. By June 2 this dredge completed the channel to full depth and nearly to full width at the railroad crossings and at the crossing of the old canal just to the east of the N. Y. C. crossing.

The other work done on this contract includes the driving of steel sheet piling was driven in the canal bank across an old ditch ditching, raising embankments, the partial completion of the dikes above lock No. 27 and some of the grading on the poorhouse bridge road.

Under extra work orders a valve was placed in the spillway, steel sheet-piling was driven in the canal bank across an old ditch and at several places the embankment was widened and reinforced.

Contract No. 159

This contract is for placing embankment on the north canal bank between Newark and Palmyra and extending Ganargua creek spillway. It was awarded to I. M. Ludington's Sons, Inc., being signed on March 27, 1917. Construction work began April 9, 1917. The engineer's preliminary estimate was $30,464.00, the contractor's bid, $28,476.00. The contract price as modified by alterations Nos. 1, 2 and 3 is $43,258.50. The value of work done during the year is $27,430, total done to date, $33,660.

W. W. Brown, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board September 18, 1917, modifies the cross-section of the portion of the Ganargua creek spillway built under this contract. It increases the contract price by $12,282.50.

Alteration No. 2, approved by the Canal Board January 9, 1918 provides for driving piles under the foundation of the apron of the Ganargua creek spillway. It increases the contract price by $1,250.00.

Alteration No. 3, approved by the Canal Board February 20, 1918, provides for driving additional piles for the foundation of the apron of the Ganargua creek spillway. It increases the contract price by $1,250.00.

The steel sheet-piling has been driven and concrete placed for the crest of the spillway. The contract is completed except for placing about 700 cu. yds. of riprap and some other miscellaneous work.

Contract No. 141

This contract is for constructing a new power-station at lock No. 29, Palmyra. It was awarded to W. F. Maas & Son, being signed on March 8, 1917. Construction work began April 2, 1917. The engineer's preliminary estimate was $41,166.76, the contractor's bid, $41,180.75. The value of work done during the year is $6,930, total done to date, $11,760.

W. W. Brown, Assistant Engineer, is in charge.

The contractor built the upper wing-walls, drove the round piles and the steel sheet-piling, and partially excavated for the power-house foundation, which was enclosed with wooden sheeting.

The work was shut down for the winter on December 1 and has not been started since.

Contract No. 172

The portion of this contract affecting this residency provides for furnishing and delivering at Lyons 23 red and 25 black lamp-posts, for aids to navigation in the Clyde river. The contract was awarded to Lupfer & Remick, being signed on March 15, 1918. The engineer's preliminary estimate for the whole contract was $14,853.00, the contractor's bid, $13,063.20. The contract price as modified by alteration No. 1 is $12,921.45. The value of work done to date on this residency is $370.

J. A. Sloat, Junior Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board May 23, 1918, eliminates the requirements for galvanizing the hoops on the barrel buoys. It decreases the contract price by $141.75.

The lamp-posts for this residency are all completed.

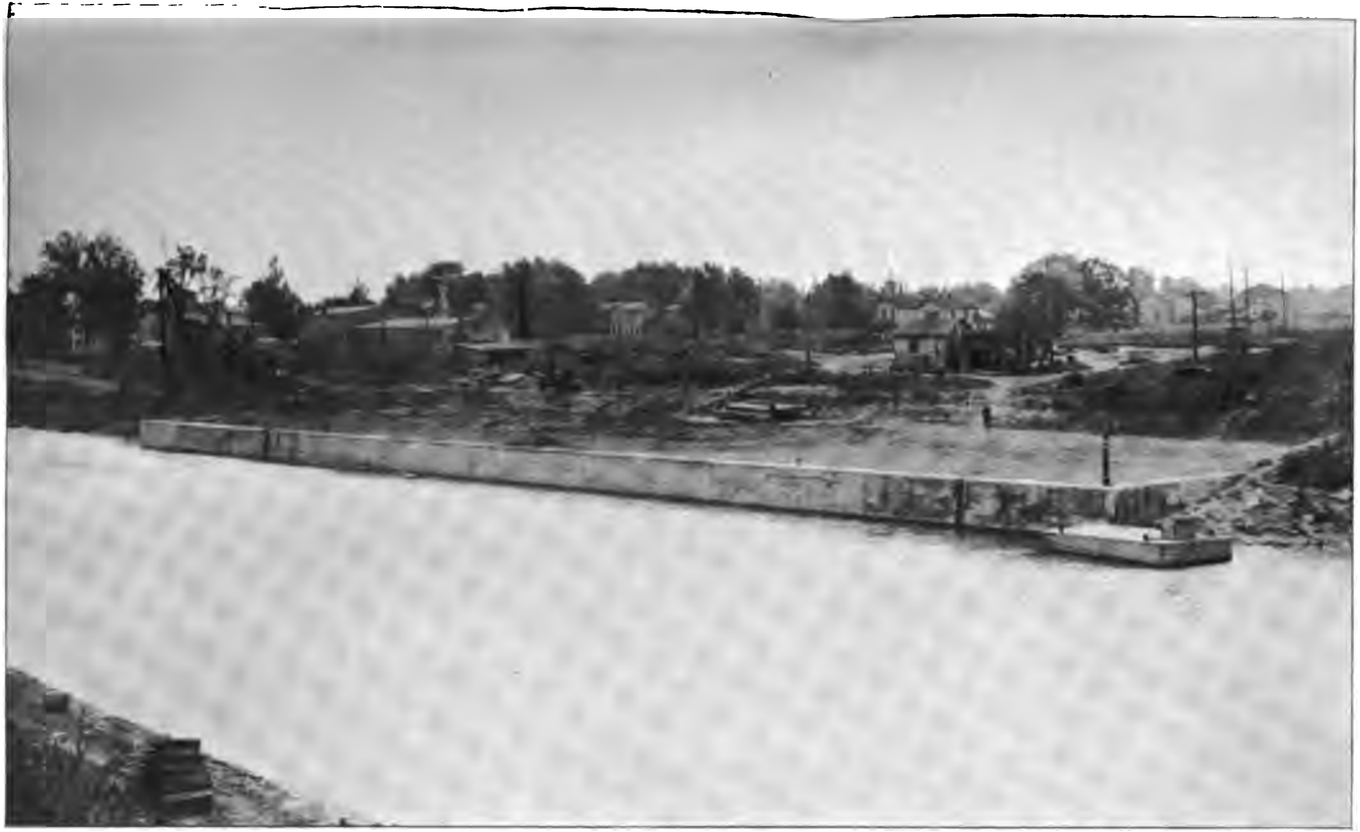
Contract No. 173

The portion of this contract affecting this residency provides for furnishing and delivering at Rochester 25 oil-burning lanterns for buoy, stake and bridge lights on the Genesee river. It was awarded to R. B. Wing & Son, being signed on February 9, 1908. The engineer's preliminary estimate was $19.00 per lantern, or $475.00 for this residency, the contractor's bid, $17.92 per lantern, or $448.00 for this residency. On June 26, 1918, the Canal Board accepted the work and approved the final account, the amount being the same as the contractor's bid.

These lanterns were duly delivered and accepted.

Terminal Contract No. 31 — *Lyons*

This contract is for constructing a dockwall and an approach at Lyons. It was awarded to Lupfer & Remick, being signed on September 30, 1916. Construction work began September 27, 1916. The engineer's preliminary estimate was $57,925.00, the



BARGE CANAL TERMINAL AT LYONS

View showing dockwall built, approach under construction and site graded, in readiness for the warehouse to be erected.

contractor's bid, $51,653.80. The value of work done during the year is $15,550, total done to date, $32,050.

F. W. Madigan, Assistant Engineer, is in charge.

During the year 190 feet of dockwall have been built, which completed a total length of 360 feet. The berme back of the wall was graded for the west end of the wall.

Work was shut down from January 21 to March 5 and no work has been done since May 18. Application has been made for the State to take over the contract as provided for under the Walters act.

Terminal Contract No. 106

This contract is for furnishing fourteen two-ton steam tractor cranes for Barge canal terminals. One of these is for the terminal at Lyons. The contract was awarded to the John F. Byers Machine Co., being signed on February 14, 1918. The engineer's preliminary estimate was $5,250.00 per crane, the contractor's bid, $5,265.00 per crane. The contract price as modified by alteration No. 1 is $5,515.00 per crane.

Alteration No. 1, approved by the Canal Board March 27, 1918, provides for housing the fourteen cranes under this contract. It increases the contract price by $250.00 per crane.

This crane has not been delivered.

Terminal Contract No. 211

This contract provides for constructing frame warehouses at Newark, Albion and Medina. The following report is for the work at Newark. The contract was awarded to W. F. Martens & Co., being signed on June 14, 1917. The engineer's preliminary estimate for this warehouse was $3,000.00, the contractor's bid, $2,765.00. The work was accepted October 16, 1917, and the final account, amounting to $7,896.60 ($2,725.70 for this warehouse), was approved by the Canal Board January 23, 1918. The amount paid on extra work orders is $147.48, of which $48.93 applies to this warehouse.

H. N. Metzger, Assistant Engineer, was in charge.

An extra work order dated July 23, 1917, provides for placing screens over the windows and doors of the warehouses. The final payment, amounting to $79.48 ($48.93 for this warehouse), was approved by the Canal Board June 12, 1918.

The Newark warehouse was built in the summer of 1917, between July 3 and August 31.

Railroad Crossings

In connection with the work of providing necessary clearance at bridges over the canal and underpinning substructures, the New York Central Railroad Co., with the Walsh Construction Co. as contractors, has finished the miscellaneous work for completing the West Shore railroad bridge ("Y" connection) two miles east of Lyons, the West Shore bridge east of Newark and the main line bridge east of Newark.

The building of the masonry for the New York Central main line bridge east of Lyons was completed in August, 1917, and the erection of the superstructure was finished on November 12, 1917. A cast-iron pipe was placed in the old river channel and the fill under the girders of the bridge was made with a hydraulic dredge in June, 1918.

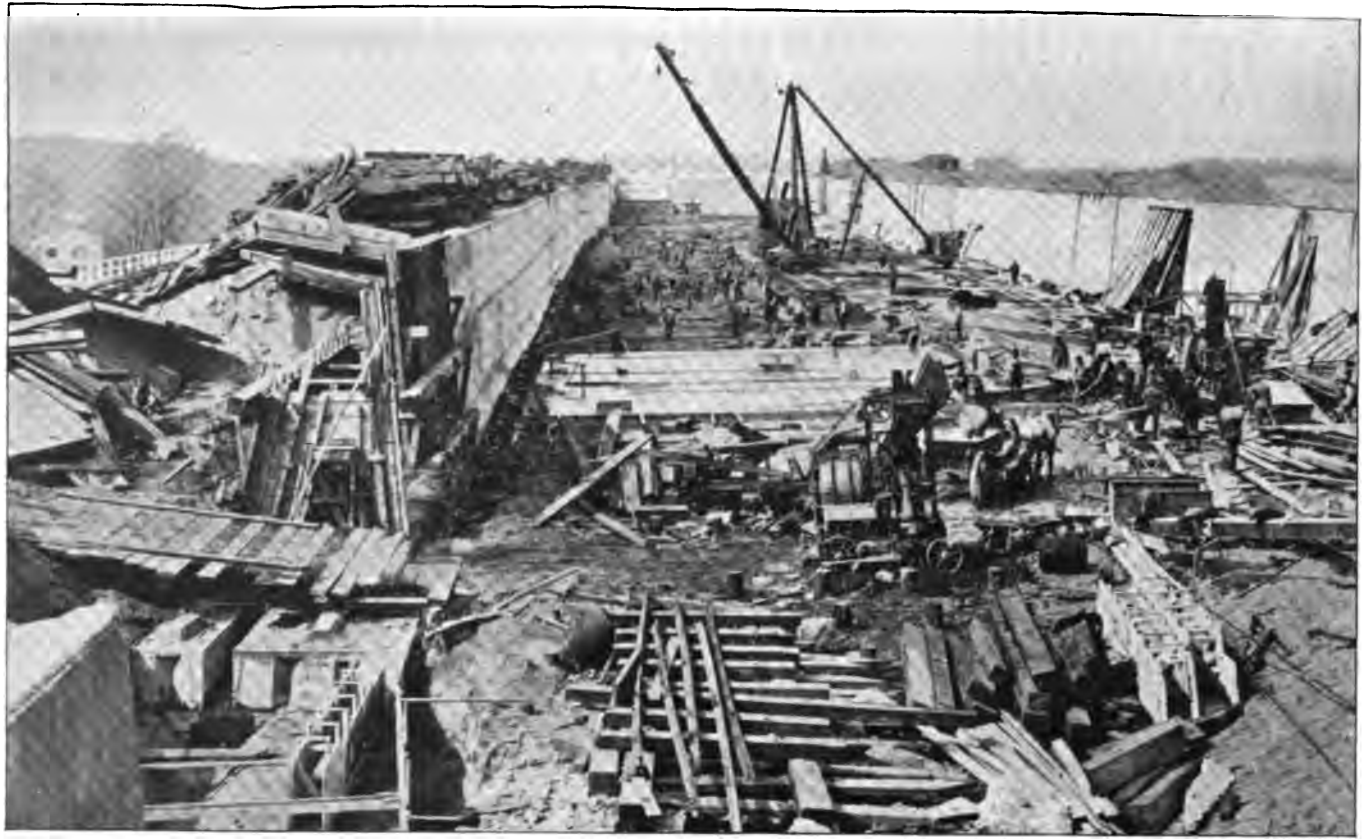
ERIE CANAL, RESIDENCY No. 9

Senior Assistant Engineer A. E. Streere reports:

The portion of the residency under my supervision comprises contracts Nos. 21-A, 23-A, 63-A, 161, 162, 170, 172, 178 and 179. Reports on these contracts and on the railroad crossings within the same territory follow.

Contract No. 63-A

This contract is for completing the construction of the canal from the west line of Wayne county to the east end of contract No. 23-A at King's Bend. Length, 12.22 miles. It was awarded to the State Highway Construction Company, being signed on February 23, 1916. Construction work began April 6, 1916. The engineer's preliminary estimate was $567,745.70, the contractor's bid, $488,103.20. The contract price as modified by



Construction of Irondequoit Concrete Trough

The walls and part of the floor were built while the wooden flume was still in place. At the close of navigation the removal of the flume began and before navigation reopened the trough had been completed.

alterations Nos. 1, 2 and 3 is $581,861.50. Excess forming embankment, first-class, to the value of $16,000.00 has been authorized by the Canal Board. The value of work done under the contract during the year is $117,840, total to date, $380,360. This contract was canceled by the Canal Board March 6, 1918, and the work has since been done by the Superintendent of Public Works. Payments made by him to July 1, 1918, amount to $335,025.44. The amount paid on extra work orders during the year is $61,995.38, total to date, $68,818.45.

D. E. Bellows, Assistant Engineer, is in charge.

Alteration No. 2, approved by the Canal Board August 1, 1917, provides for changing the plan of the floor of the new trough, for moving the new trough eight feet south of the location shown on the original plans and for filling the Cartersville widewaters with second-class embankment to elevation 465.4. It increases the cost of the contract by $78,036.30.

Alteration No. 3, approved by the Canal Board February 27, 1918, provides for restoring breaks in the south embankment at the Cartersville widewaters with first-class embankment instead of second-class embankment. It increases the contract price by $3,222.00.

An extra work order dated April 2, 1917, provides for completing certain excavation and embankment under the Auburn branch railroad crossing at Cartersville, which was not included in contract No. 63-A. The purpose of this order was to secure a channel of sufficient width to pass boats at the opening of navigation. The final account, amounting to $5,270.26, was approved by the Canal Board July 11, 1917.

An extra work order dated May 26, 1917, provides for filling the Cartersville widewaters to stop leakage and to prevent further damage to the canal bank. Payments to the total amount of $59,331.27 have been made on this work order. The work of filling the widewaters was put under alteration No. 2 on August 1, 1917, but the bills were not all in at that time, so that payments were approved as late as February 27, 1918.

An extra work order dated February 2, 1918, provides for underpinning the south abutment of the Cartersville bridge and for removing and replacing concrete prism lining as directed.

The final account, amounting to $4,216.92, was approved by the Canal Board March 6, 1918.

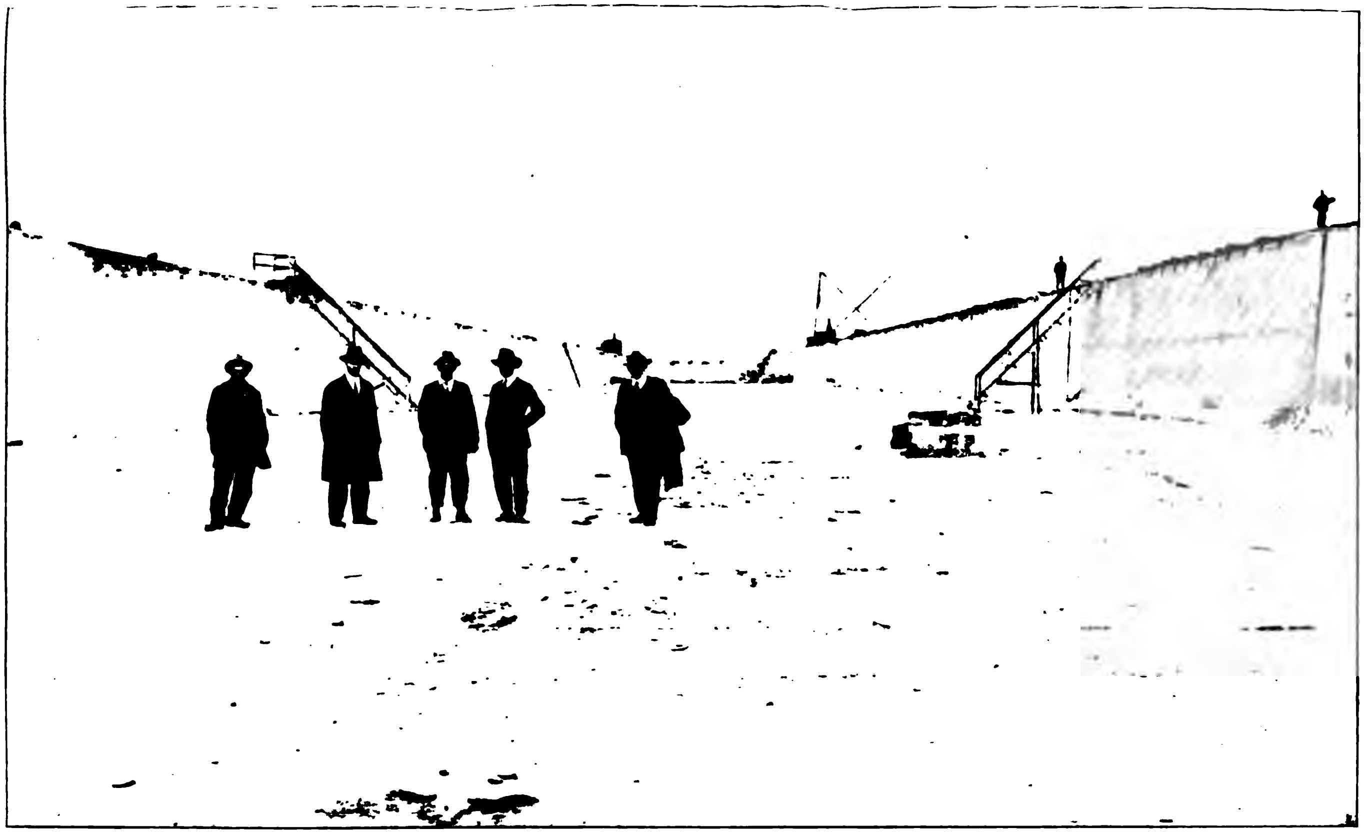
General construction operations on this contract were closed during the summer months on account of maintaining navigation on the present Erie canal. Therefore work during the summer season was limited to that which did not interfere with canal navigation. Shortly after the opening of navigation in 1917 the south bank across the Cartersville widewaters gave way, but the water was retained by the old Erie canal bank. The filling of the area between the old canal bank and the new prism lines was carried on under the extra work order dated May 26, 1917, up to August 1, 1917, and after that date under alteration No. 2. The material for this fill was obtained from the Smith spoil-bank west of Mitchell's bridge and also from a bank appropriated for that purpose along the Cartersville highway.

The south abutment of the Cartersville highway bridge was underpinned by means of carrying two concrete buttresses down to hard material. This work was performed under the extra work order of February 2, 1918.

The reconstruction of the concrete trough across Irondequoit creek was started in August, 1917. The north wall, a large portion of the north half of the floor and the south wall were completed before the close of navigation. Some of the concrete at the point of junction with the old work could not be placed until the timber flume was removed after navigation closed. The removal of the timber flume was started at the close of navigation and was completed about the first of March, 1918.

Each side wall of the reconstructed portion of the Irondequoit flume contains a combined inspection and drainage gallery. The joints between sections of the new wall were made water-tight by imbedding a strip of sheet lead into each block as it was built.

The floor of the trough consists of three separate layers of concrete, a gravel filtration basin and a layer of tar-felt waterproofing. This floor was built in the following manner: The bottom layer of concrete is 12 inches in thickness and slopes downward from the center toward the side walls. It is reinforced by deformed bars placed three feet on centers. This layer is divided into blocks 35 feet square. The joints between these blocks are covered with reinforced concrete patches 8 feet wide



Compleded Irondequoit Concrete Trough

Reconstruction at the point where the canal was carried in a temporary wooden flume after the break in the original trough.

and 6 inches thick, one-half of each patch resting directly upon the concrete of a block, while the other half, resting upon the adjacent block, is separated from it by single-ply tar-felt waterproofing. The bottom layer of concrete is also sealed to the side walls by means of lead strips bent longitudinally in the form of a letter U and set with the edges entering the side walls and the floor sections, thus making a water-tight joint. The layer of concrete is covered with a layer of gravel, into which are laid 4-inch farm tile for collecting any leakage and carying it to the side walls, where holes are provided to deliver such leakage to the drainage gallery. Overlying the gravel there is a layer of concrete, 8 inches thick, extending between the side walls and built in blocks about 30 feet square, reinforced in the same manner at the bottom layer. Over the 8-inch floor are three to five layers of waterproofing, while on the top of this is a 4-inch protecting layer of concrete, placed in blocks about 15 feet square.

The joining of the old and new sections of the floor was made in the following manner: The lower layer of concrete of the new construction was carried under that of the old floor for about 2 feet and then brought up to an elevation so as to enclose the edge of the existing floor about 6 inches above its bottom and thoroughly rammed to make water-tight contact with the old work. The junction between the old and new side walls was made in a somewhat similar manner, the back of the new wall being so constructed as to overlap the existing wall for about 8 feet, thus eliminating any possibility of seepage on account of contraction of the connecting sections.

The drainage collected in the north gallery is carried to the south gallery by means of a 12-inch flexible joint pipe, encased in reinforced concrete. From the south gallery the water is carried to the creek below by a 24-inch cast-iron pipe, encased in concrete and laid down the slope of the fill. After the canal was filled the leakage of the floor was found to be very slight.

Contract No. 63-A was canceled by resolution of the Canal Board on March 6, 1918, and the work was carried on by the Superintendent of Public Works. The plant of the contractor was utilized and also additional steam-shovel plants, with locomotives and dump-cars, were brought in to insure the opening of a channel by May 15. The Riley & Knapp steam-shovel opened a channel more than 50 feet wide between Stas. 1926 + 80 and 1950, removing 41,280 cu. yds. The E. W. Foley steam-shovel, with numerous teams, made a channel between Stas. 1969 and 1996 + 50, removing 29,055 cu. yds. The material from both of these plants was deposited along the high bank at the Fairport widewaters. The Ludington steam-shovel and teams completed the channel to full width between Stas. 2053 and 2059, removing 12,317 cu. yds. The Walsh Construction Company's steam-shovel plant opened a channel from Sta. 2281 to Sta. 2295, over 50 feet wide at King's Bend, removing 21,674 cu. yds. All of this excavating equipment was removed from the canal prior to May 15.

Contract No. 179

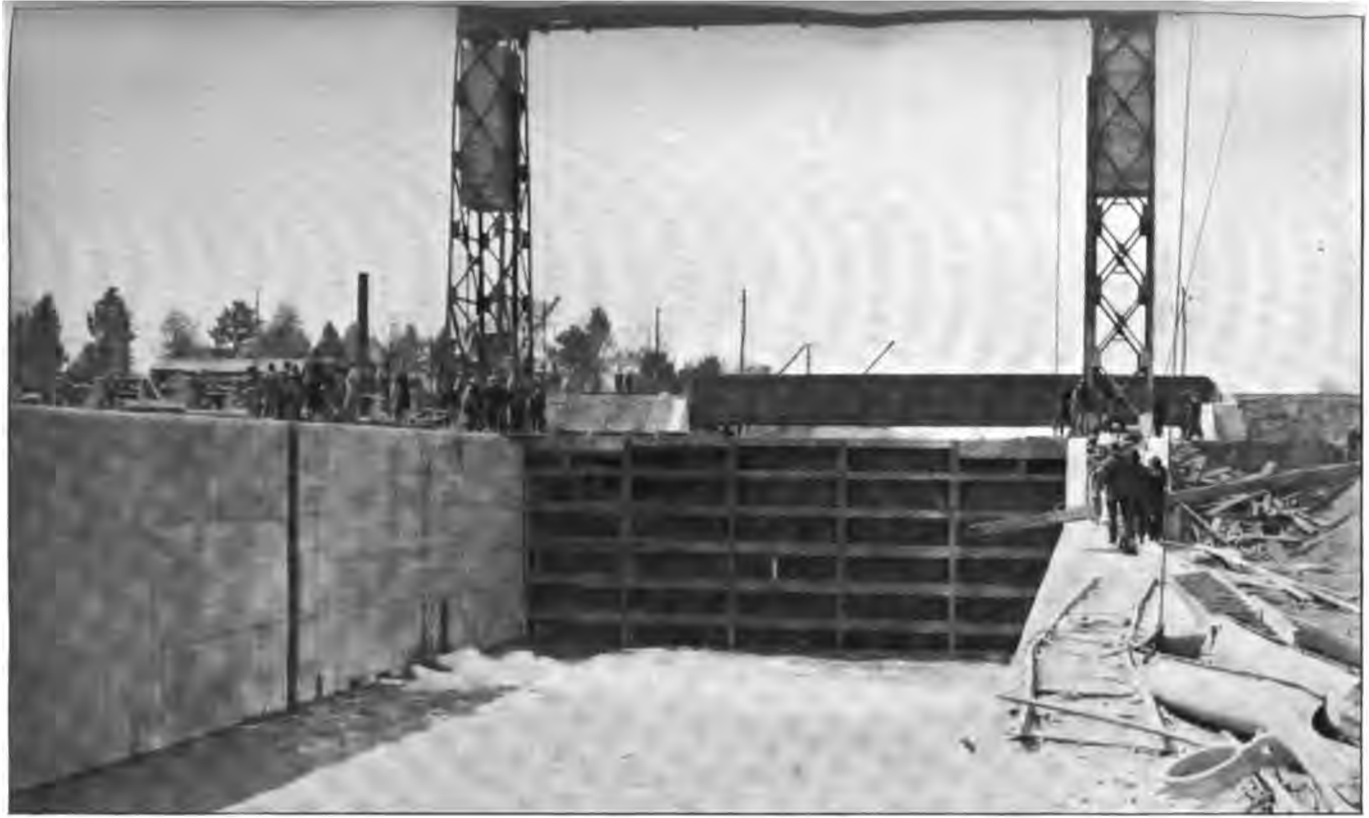
This contract is for completing the canal prism at the New York Central and the West Shore railroad crossings near Pittsford. It was awarded to I. M. Ludington's Sons, Inc., being signed on November 9, 1917. The engineer's preliminary estimate was $76,033.50, the contractor's bid, $79,712.20. The contract price as modified by alteration No. 1 is $84,992.20. The value of work done to date is $62,190. The amount paid on extra work orders is $992.00.

D. E. Bellows, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board April 24, 1918, provides for completing the embankment on the south side of the canal at the Cartersville widewaters, using material excavated under contract No. 179. It increases the contract price by $5,280.00.

An extra work order dated February 9, 1918, provides for placing about 220 feet of 15-inch tile drain to prevent spoil from interfering with drainage. The final account, amounting to $992.00, was approved by the Canal Board April 10, 1918.

The major portion of the excavation at both crossings was removed prior to the opening of navigation. That which remains consists principally of slope trimming and work of a minor nature. The splay wall and embankment near the Auburn railroad bridge and half of the apron above the guard-gate at Cartersville were completed when the work was stopped at the opening of navigation.



GUARD-LOCK AT THE EAST SIDE OF THE GENESEE RIVER CROSSING

Two guard-locks, one on each side of the crossing, protect the canal from floods in the river. Sluices are provided so that the structures may be used as lift locks if occasion demands. View taken as the gate was about to be raised for the opening of navigation in 1918.

Contract No. 23-A

This contract is for completing the construction of the canal from King's Bend to the Lehigh Valley railroad crossing about one-half mile east of the Genesee river. Length, 5.13 miles. It was awarded to H. S. Kerbaugh, Inc., being signed on May 20, 1916. On July 3, 1917, it was assigned to the Empire Engineering Co., Inc., and this assignment was approved by the Superintendent of Public Works August 14, 1917. Construction work began on July 8, 1916. The engineer's preliminary estimate was $651,703.10, the contractor's bid, $630,568.42. The contract price as modified by alterations Nos. 1 and 2 is $745,672.42. The value of work done during the year is $319,560, total done to date, $461,810.

C. L. Baldwin, Assistant Engineer, is in charge.

Alteration No. 2, approved by the Canal Board August 1, 1917, provides for placing wash wall on both sides of the canal where it had been omitted between Sta. 2358, at East Henrietta road, and the guard-lock, for reinforcing the piers of the guard-lock by-pass and for increasing the item of furnishing, erecting and painting metal in lock-gates, lock-valves and buffer-beams. It increases the contract price by $118,104.00.

An extra work order dated September 29, 1917, provides for reaming holes, chipping and fitting members of metal in lock-gates furnished and delivered under old contract No. 23, payment to be made on the basis of cost plus 15 per cent.

An extra work order dated December 31, 1917, provides for constructing a temporary cut-off and retaining wall at the west end of the guard-lock, payment to be made on the basis of cost plus 15 per cent.

The excavation for the guard-lock was made with a steam-shovel plant and a Lidgerwood machine equipped with a drag-line bucket, the material being disposed of in embankment and spoil by locomotives and dump-cars. In the latter part of September the concrete plant was erected and concrete work for the guard-lock was started. During February the work was stopped on account of cold weather and at other times progress was irregular and many delays occurred because concrete materials could not be delivered in sufficient quantities when needed. This latter condition was due largely to railroad congestion. However, on May 29, the concrete for this lock was completed except for minor details.

Between the guard-lock and the east Henrietta road bridge excavation progressed, but unstable material caused many delays and the work was not finished by May 15, the date that navigation opened. The plant used consisted of two steam-shovel plants and the Lidgerwood drag-line machine.

During the months of April and May the low banks in the vicinity of South and Clinton avenues were raised for navigation purposes. Two steam-shovel plants and dump-cars were employed, one being located on the north and the other on the south side of the canal.

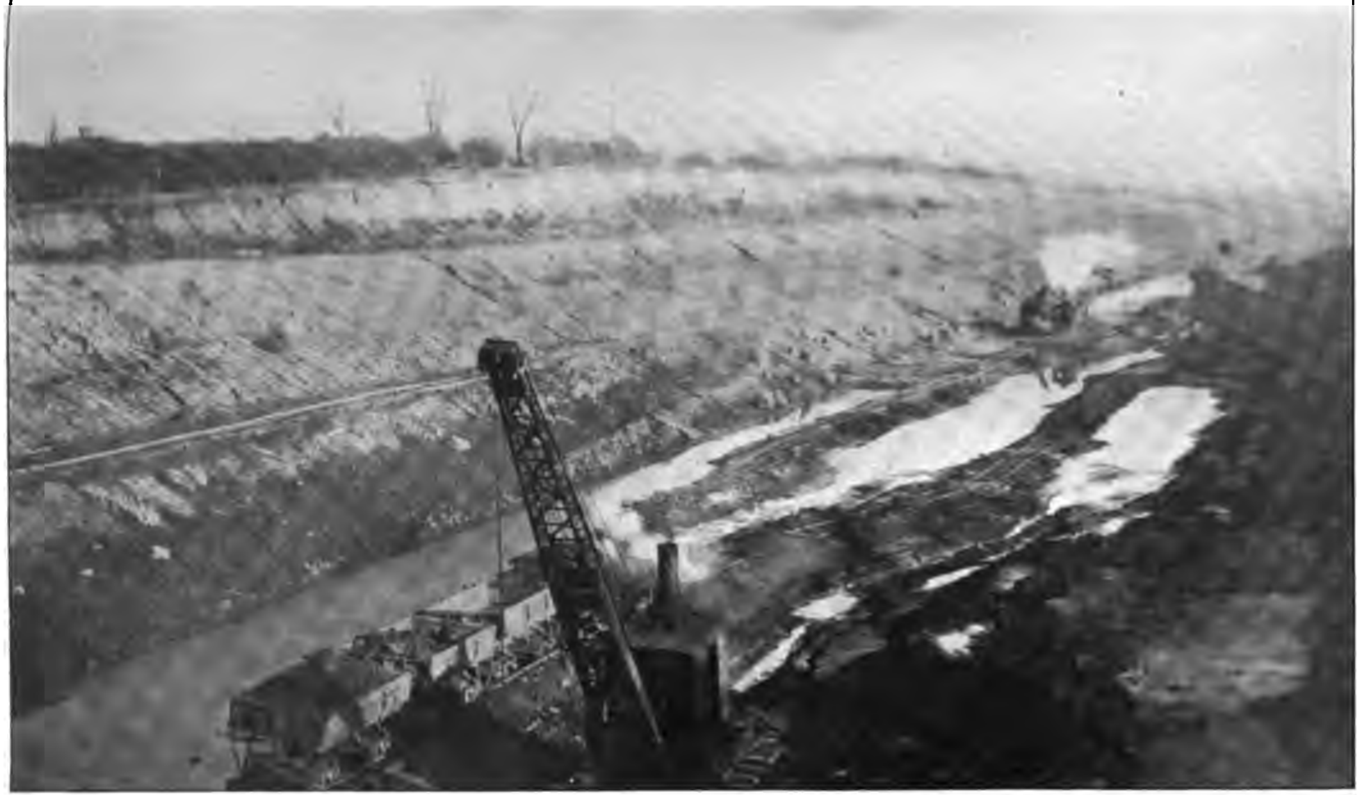
The driving of steel sheet-piling in the toe of the high banks west of lock No. 33 was started in the latter part of August and continued until the first of May. Delays were numerous and progress slow. The equipment was meager and at times the quantity of steel piles on hand for driving was small. When navigation opened this work was stopped, although it had not been completed.

The lower gates of lock No. 32 were completed and adjusted and made ready for operation. The west gate of the guard-lock was erected and painted and the operating machinery was installed. Wash wall was placed in the wash-wall notch for a considerable distance west of lock No. 33 and along several incomplete stretches on the north slope between the guard-lock and the east Henrietta road bridge.

Shortly after the opening of navigation a dipper-dredge, derrick-boat and scows were brought to this contract and the excavation is now being done by dredging. Material at present is being spoiled on low areas west of lock No. 33.

Contract No. 178

This contract is for constructing additional protection work in the by-passes at locks Nos. 32 and 33. It was awarded to W. F. Martens, being signed on March 12, 1918. The engineer's preliminary estimate was $41,706.00, the contractor's bid, $19,844.00. The value of work done to date, $47,272. The



EXCAVATION IN THE HEAVY CUT SOUTHEAST OF ROCHESTER

The view, which is looking east from the bridge on the west road to Henrietta, was taken early in the winter preceding the opening of through navigation in the spring of 1918.

work was accepted June 26, 1918, and the final account, amounting to $47,271.62, was approved by the Canal Board September 24, 1918.

C. R. DeGraff, Assistant Engineer, was in charge.

The work at lock No. 33 consists in raising the by-pass banks, placing concrete slabs above and below the upper spillway, and placing additional protection at the lower spillway and concrete adjacent to and around the enclosed by-pass conduits. A line of 3/8-inch steel sheet-piling was driven as a cut-off around the upper by-pass spillway, being carried from the south bank to the power-house. Also a line of steel sheet-piling was driven in the north canal bank, extending for about 600 feet westerly from the upper end of lock No. 33 and joining with steel sheet-piling driven under contract No. 23-A.

The construction work around lock No. 32 was of a similar nature to that at lock No. 33, excepting that no steel sheet-piling was used at that location.

Contract No. 161

This contract is for furnishing and delivering electric motors and certain machinery at Rochester. It was awarded to Lord Construction Co., being signed on August 3, 1917. The engineer's preliminary estimate was $5,972.00, the contractor's bid, $6,452.00. The contract price as modified by alteration No. 1 is $15,867.35. The value of work done to date is $9,040. The amount paid on extra work orders is $482.00.

Gordon Edson, Assistant Engineer, is in charge of the west guard-lock, and C. L. Baldwin, Assistant Engineer, is in charge of the east guard-lock.

Alteration No. 1, approved by the Canal Board February 27, 1918, provides for installing the electric operating and lighting equipment on these two guard-locks. It increases the contract price by $9,415.35.

An extra work order dated May 10, 1918, provides for temporary machinery for operating the guard-locks. The final account, amounting to $482.00, was approved by the Canal Board June 12, 1918.

The electric motors, cabinets and lighting system were installed on the west guard-lock, while the motors and cabinet were installed on the west gate of the east guard-lock. The installation of the operating equipment for the east gate of the east guard-lock is delayed until the completion of the east gate of this lock.

Contract No. 21-A

This contract provides for completing the canal from about Sta. 2449, about 400 feet west of the Genesee river, to about Sta. 2566 + 58, about 442 feet from the east end of contract No. 6. Length, 2.23 miles. It was awarded to the Walsh Construction Co., of Davenport, Iowa, being signed on February 16, 1916. Construction work began March 1, 1916. The engineer's preliminary estimate was $415,700.00, the contractor's bid, $384,928.69. Excess concrete, second-class, to the value of $9,000.00 has been authorized by the Canal Board. The value of work done during the year is $162,020, total done to date, $393,990. The amount paid on extra work orders during the year is $1,263.23, total to date, $1,373.67.

Gordon Edson, Assistant Engineer, is in charge.

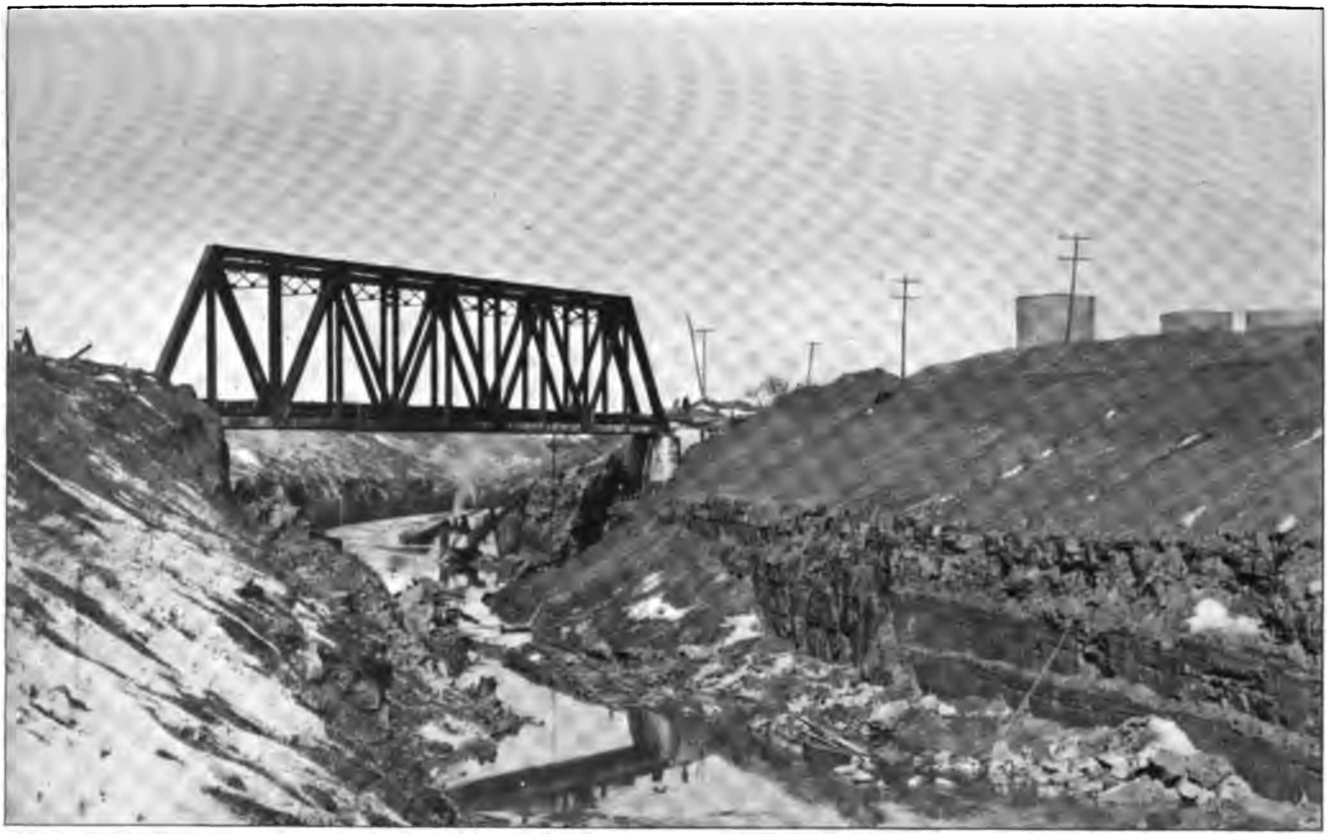
Alteration No. 1, approved by the Canal Board July 11, 1917, provides for flattening side slopes, changing type of bank construction, changing location of snubbing-posts, eliminating certain ladders, protecting slopes with riprap and changing construction at stream entrances. It increases the contract price by $37,546.85.

Alteration No. 2, approved by the Canal Board March 27, 1918, provides payment for additional coffer-dams, pumping, bailing and draining. It increases the contract price by $6,000.00.

An extra work order dated November 22, 1917, provides for driving a row of sheet-piling and maintaining a channel to provide drainage from the contract. The final account, amounting to $1,263.23, was approved by the Canal Board March 13, 1918.

An extra work order dated January 2, 1918, provides for removing a small amount of material at the east end of contract No. 6, placing timber fenders on guide-piers along east approach to guard-lock, and grouting track rails at the guard-lock.

An extra work order dated June 28, 1918, provides for a shelter for the lock-tender at the guard-lock.



WORK AT THE PENNSYLVANIA RAILROAD BRIDGE, SPUR LINE, OVER THE BARGE CANAL

The bridge carries a single track. The view was taken about two months before the opening of navigation and shows the finishing of work in this vicinity.

Three steam-shovel plants with locomotives and car equipment were in continuous operation until November 1, 1917, at which time the heavy excavation was completed, excepting at the terminal crossing of the Pennsylvania railroad. The delay of the railroad company in completing this bridge and removing the temporary tracks delayed work at this railroad crossing for more than a month. Two steam-shovels started removing the material at the terminal crossing about the middle of December and worked continuously until about February 15, when they closed down on account of inability to unwater the cut. This condition was brought about by continuous high water in the river and consequently operations were not resumed until the latter part of March. The general excavation at this point was completed the first week in May, at which time the construction tracks in the bottom were removed.

The trimming of the earth slopes was completed during the year by means of a traveling excavator equipped with a drag-line bucket. The concrete retaining walls between the guard-lock and Scottsville road were started in October and carried on until the middle of January, when work was suspended on account of cold weather. This work was resumed in April and completed during the month of May.

Stream entrances were constructed at various points, as designated, and all have been completed.

Contract No. 170

This contract is for constructing a junction lock and completing the canal prism excavation and incidental work at South Greece. It was awarded to Cleveland & Sons Company, being signed on November 10, 1917. The engineer's preliminary estimate was $54,800.50, the contractor's bid, $64,588.50. The contract price as modified by alteration No. 1 is $64,942.50. The value of work done to date is $44,060.

A. S. Milinowski, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board March 27, 1918, modifies plan for waste-weir outlet ditch, eliminates the steel sheet-piling at the upper end of the lock and eliminates the construction of the junction lock-gates. It increases the contract price by $354.00.

An extra work order dated June 4, 1918, provides for constructing timber platforms to facilitate the operation of balance beams, for constructing a bridge across the lower end of the lock, for excavating pits to close up blind drains and for constructing drainage ditches, payment to be made on the basis of cost plus 15 per cent.

This lock is formed by the construction of head-walls to carry the gates at either end. The sides of the chamber are earth slopes protected by wash wall. Three cribs were built on one side of the chamber to serve as a guide for boats, and a plank walk five feet wide extends along the same side of the chamber, connecting the two head-walls and the cribs. This contract also includes the construction of a waste channel from a spillway in the new canal near the head of this lock to a culvert under the old canal.

The lock was ready for navigation on May 15 and a channel had been opened through the dike across the main canal. The wall of the waste channel has been completed and part of this channel has been excavated.

Contract No. 162

This contract provides for constructing a drain across the canal at Main street, Brockport. It was awarded to Charles A. Ingersoll, being signed on March 27, 1917. Construction work began March 22, 1917. The engineer's preliminary estimate was $6,173.90, the contractor's bid, $7,273.90. The contract price as modified by alteration No. 1 is $7,208.30. Excess Portland cement sidewalk, rebuilt, to the value of $50.00 has been authorized by the Canal Board. The work was accepted August 1, 1917, and the final account, amounting to $6,455.72, was approved by the Canal Board August 15, 1917.

A. S. Milinowski, Assistant Engineer, was in charge.

The contract work was completed last year, but had not been formally accepted at the close of the fiscal year.

Contract No. 172

The portion of this contract affecting this residency is for furnishing and delivering at Rochester 10 barrel buoys and 4 lamp-posts for aids to navigation in the Genesee river. It was awarded to Lupfer and Remick, being signed on March 15, 1918. The engineer's preliminary estimate for the whole contract was $14,853.00, the contractor's bid, $13,063.20. The contract price as modified by alteration No. 1 is $12,921.45. The value of work done to date on this section is $590. The amount paid on extra work orders during the year is $906.50, of which amount $49.00 applies to work on this residency.

N. R. McLoud, Junior Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board May 23, 1918, eliminates the requirements for galvanizing the barrel hoops. It decreases the contract price by $141.75.

The barrel buoys were delivered on this section, but the lamp-posts were sent to Tonawanda.

Railroad Crossings

N. Y. C. R. R., Auburn Branch. The superstructure has been completed and painted. The old masonry was removed by May 1, 1918.

West Shore R. R. The superstructure was completed about August 1, 1917.

Pennsylvania R. R., Terminal Branch. Backfilling behind the abutments was finished. The false work was put up and the superstructure erected, pinned and bolted during July, 1917. Rivetting was completed about October 6. Tracks had been laid and ballasted and traffic was turned over the bridge on November 12. The temporary bridge was removed about December 19, 1917.

N. Y. C. R. R., Main Line. The excavation under the tracks was completed during August, 1917.

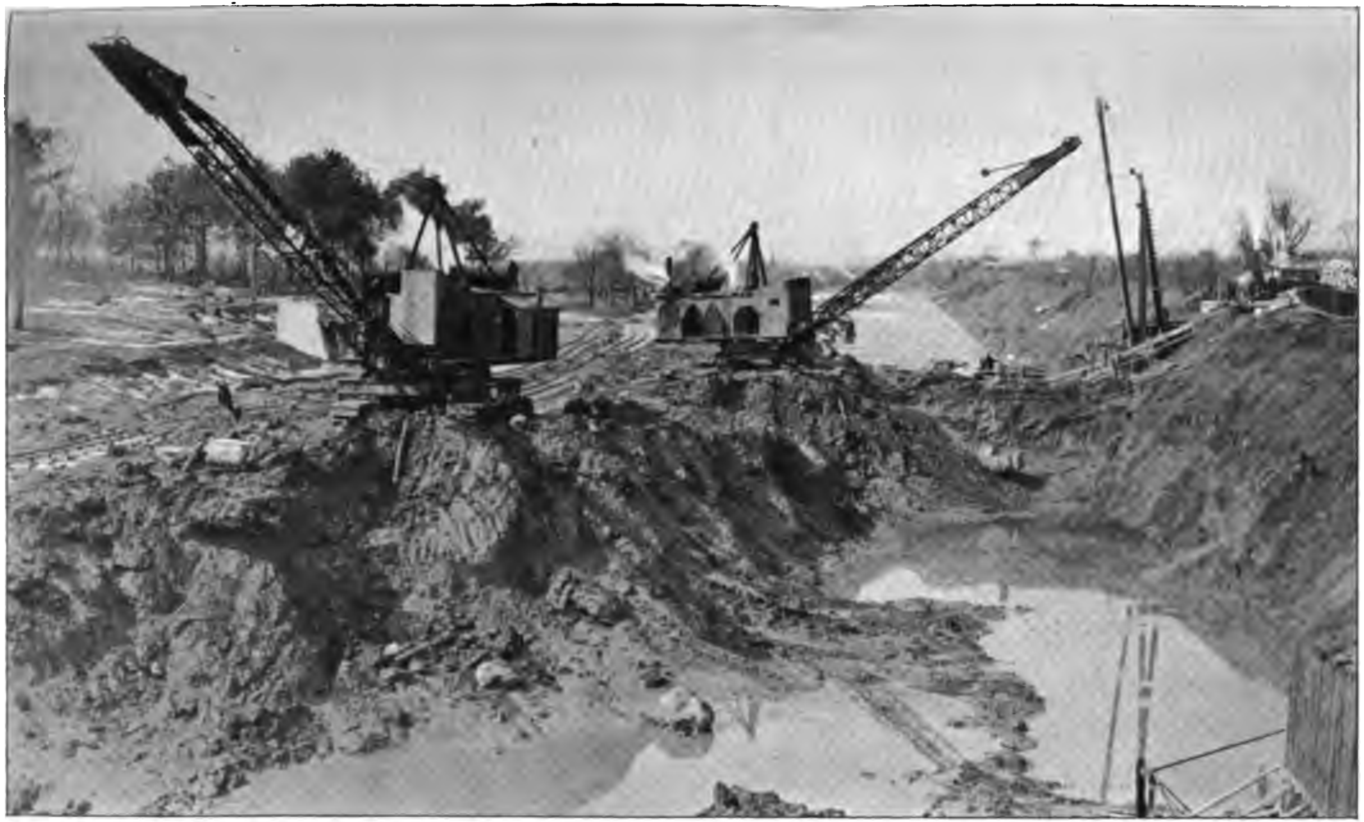
Senior Assistant Engineer A. R. Morse reports:

The portion of this residency in my charge comprises contracts Nos. 59, 59-A, 138 and 144, terminal contracts Nos. 48 and 57, Genesee street sewer overflows Nos. 1 and 2, and the Clarissa street bridge and approaches. There are four railroad crossings within this portion of the residency — the Erie crossing of the Genesee river south of Clarissa street, the Erie and Lehigh Valley crossings of the Barge canal in Genesee Valley park and the Pennsylvania (main line) crossing of the Barge canal west of the Genesee river.

Many conditions on this residency have required special study and treatment. The canal passes through Genesee Valley park and in order that the usefulness of the park should not be impaired the State has had to adjust existing conditions to canal requirements. The use of Genesee river for harbor purposes has, under the plan adopted, required the raising of the water-surface and this has necessitated the adjustment of certain city sewers, the raising of the Elmwood avenue bridge, the rebuilding of the Clarissa street bridge, the construction of over two miles of wall along the banks and the construction of a dam. The Lehigh Valley yards have also required adjustment to afford land for the canal terminal.

The city sewers are to be adjusted by the City. The Elmwood avenue bridge has been raised by the State. The Clarissa street bridge is to be rebuilt by the City, the State to pay for its share of the work, the new bridge being larger than the State would be required to build. The retaining walls along the river are being built by the State, necessary interference with railroad tracks and traffic having been provided for by agreements with the railroads. In order to afford flood protection, these walls are being built higher than is necessary for canal purposes. The cost of this additional height is borne by the City, according to agreement. The dam is being built by the State, an agreement having been reached with the power owners whereby the canal purposes are served and the power rights are disturbed as little as possible.

Considerable study was made of the Lehigh Valley railroad yard and an agreement was reached for a rearrangement of this yard on the basis of facilities equal to those possible under present conditions, the State to furnish certain lands to the east of the present tracks and the railroad company to move the tracks.



Prism Excavation in Genesee Valley Park, Rochester

A view taken about two months before navigation was opened. Just beyond the excavating machines are seen the abutments of the main drive bridge. The Genesee river crossing is situated at the far end of the stretch of channel shown in the view.

In developing the plans for this work and adjusting the various problems, the purpose has been to secure desirable results as economically as was practicable and to interfere with or injure the rights of others as little as possible.

Surveys and plans are under way for an approach to the Rochester terminal from Court street and South avenue. It is proposed to widen the Court street bridge over the bed of the old canal and build an approach from this bridge to the south, passing under the Lehigh Valley tracks and then rising to the level of the wharf. An agreement has been made with the Lehigh Valley Railroad Co. for the construction of a viaduct over this approach, but construction work has not been started.

Contract No. 59

This contract is for the construction of the canal from the west end of contract No. 23-A to the east end of contract No. 21-A, and the construction of Rochester harbor, between the crossing at Genesee Valley park and a point about 400 feet south of the proposed dam near Court street bridge. It was awarded to MacArthur Brothers Company, being signed on November 3, 1916. Construction work began January 3, 1917. The engineer's preliminary estimate was $1,675,252.86, the contractor's bid, $1,596,788.91. The contract price as modified by alterations Nos. 1 and 2 is $1,603,285.11. The value of work done during the year is $371,940, total done to date, $413,460. The amount paid on extra work orders during the year is $65,523.46, total to date, $66,023.46.

Arthur S. Whitbeck, Assistant Engineer, is in charge.

Alteration No. 2, approved by the Canal Board December 19, 1917, provides for changing the west river wall at the point of intersection with the city water mains and for filling with embankment certain low places in the feeder banks. It increases the contract price by $2,006.00.

An extra work order dated September 24, 1917, provides for building a temporary timber movable dam across the Genesee river at Elmwood avenue. Payments to the amount of $65,223.46 have been made on this order.

An extra work order dated September 26, 1917, provides for pumping out the pit at the Lehigh Valley crossing. The final account, amounting to $300.00, was approved by the Canal Board December 19, 1917.

The excavation through the park progressed to such an extent that navigation through this section was opened in May with a channel having a minimum width of 60 feet. Three drag-line machines, two grader outfits and a Thew shovel were used. The main drive bridge, a steel arch, was practically completed. Grading for roads and walks progressed with the excess spoil being deposited in the South meadow. One concrete arch bridge west of the river was completed. The Elmwood avenue bridge was raised and the approaches completed. The river excavation was made with a large Bucyrus drag-line machine and the spoil was deposited along the west bank of the river. Work has progressed on the walls along the east and west sides of the harbor.

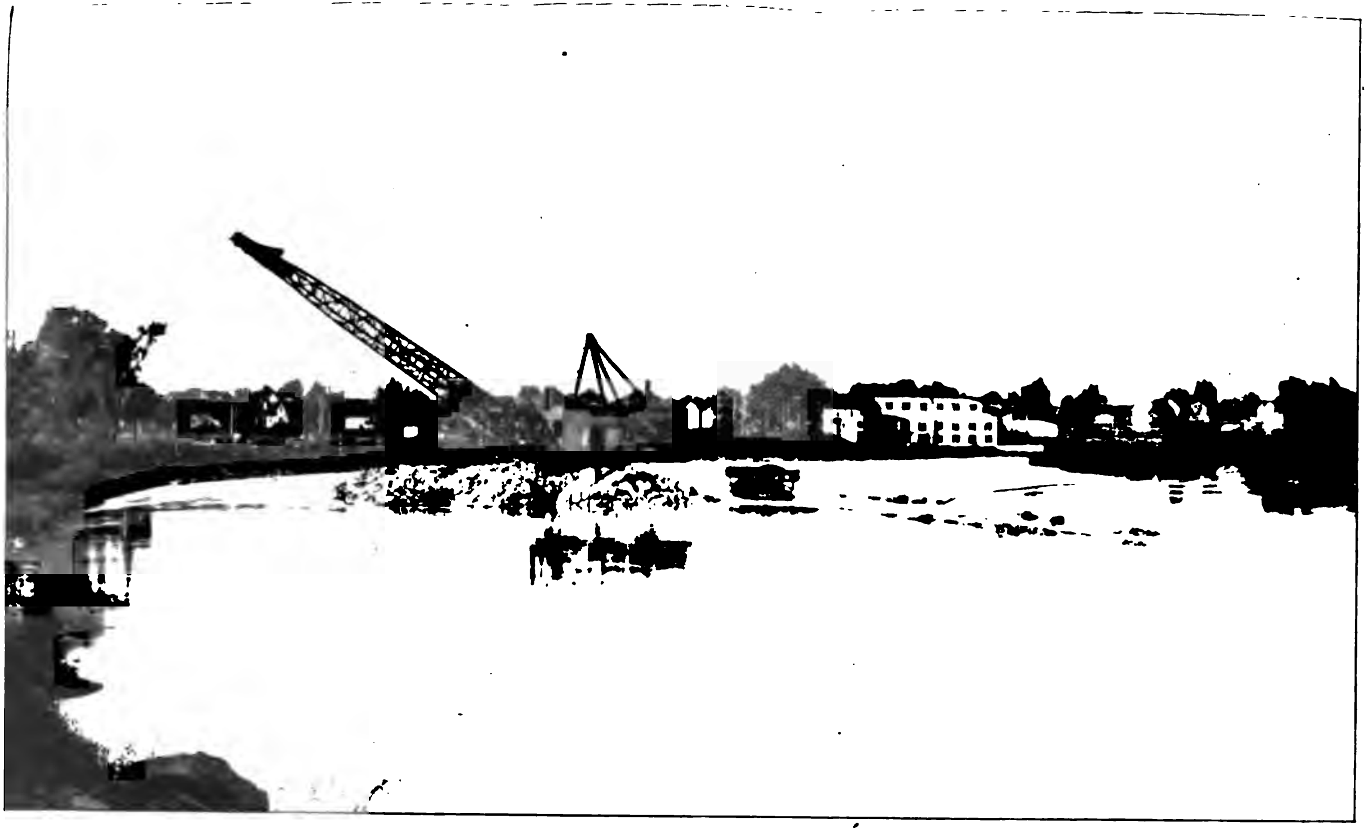
The temporary dam across the Genesee river south of Elmwood avenue was built during the fall and winter months.

Contract No. 59-A

This contract is for the construction of a sewer from Genesee Valley park to a point about 100 feet south of Court street bridge, Rochester. Length, 2.914 miles. It was awarded to P. H. Murray, being signed on July 3, 1916. Construction work began July 20, 1916. The engineer's preliminary estimate was $124,260.55, the contractor's bid, $110,689.45. The value of work done during the year is $38,857. On December 4, 1917, the Canal Board accepted the work and approved the final account, which amounted to $109,996.85. The amount paid on extra work orders during the year is $34.00, total to date, the same.

J. S. Summers and W. W. Brown, Assistant Engineers, were successively in charge.

The work was completed during the fall and early winter months of 1917.



Excavation in the Genesee River near Brooks Avenue, Rochester

The canalized Genesee furnishes navigation from the main canal line to the center of Rochester.

Contract No. 138

This contract is for constructing a movable dam, bulkheads, retaining wall and incidental work, at Rochester. It was awarded to the Combined Construction Company, being signed on April 19, 1917. Construction work began June 8, 1917. The engineer's preliminary estimate was $302,700.30, the contractor's bid, $321,115.12. The value of work done during the year is $19,500, total done to date, $20,200.

J. S. Summers, Assistant Engineer, is in charge.

The west bulkhead and walls and the west pier of the bridge dam were started and progressed to near completion, when the high water of the spring flood made it necessary to suspend operations. Work was resumed early in June.

Contract No. 144

This contract is for constructing two concrete bridges over Red creek in Genesee Valley park, Rochester. It was awarded to W. F. Martens & Co., Inc., being signed on June 14, 1917. Construction work began June 18, 1917. The engineer's preliminary estimate was $41,480.70, the contractor's bid, $41,258.70. The contract price as modified by alteration No. 1 is $46,208.70. The value of work done during the year is $5,610, total done to date, $5,740.

L. G. Fisher, Assistant Engineer, is in charge.

Work has progressed slowly on this contract. A small amount of excavation was done for the abutments of the lower arch bridge. The excavation for the upper bridge is completed, as well as the concrete for the abutments.

Terminal Contract No. 48 — *Rochester*

This contract provides for constructing a terminal on the east side of the Genesee river at Rochester. It was awarded to Michael H. Ripton, being signed on October 19, 1916. Construction work began November 22, 1916. The engineer's preliminary estimate was $101,000.00, the contractor's bid, $93,828.00. The contract has been modified by alteration No. 1, which made no change in the contract price. The value of work done during the year is $54,420, total to date, $79,900.

C. E. Elmendorf, Assistant Engineer, is in charge.

The wall was completed for the 1,500 feet of terminal dock, 3,400 cu. yds. of concrete having been laid during the year. The excavation, embankment and miscellaneous work was completed during the season. Some progress has been made in the final shifting of the Lehigh Valley railroad yards.

Railroad Crossings

The Erie railroad bridge over the Genesee river was completed during the season. At the Erie crossing of the Barge canal east of Genesee Valley park, construction started about October 1, 1917, and the abutments were completed by June 1, 1918. Backfilling of the abutments is practically completed, but the steel has not been placed. The Lehigh Valley bridge over the Barge canal was in place and riveted prior to June 30, 1917. The metal reinforcement and the concrete floor for both tracks was placed during July, 1917, and the bridge was thrown open to traffic on August 24. At the Pennsylvania main line crossing, work started about the middle of August, 1917, and the substructure was completed except for the west wing of the south abutment by January 15, 1918. The erection of false work started about May 15. The superstructure has been erected, the lower chord riveted and the false work removed. During the erection of this structure the traffic of this railroad has been diverted over the Erie and the B., R. & P. railroads.

ERIE CANAL, RESIDENCY No. 10-A

Senior Assistant Engineer B. E. Failing reports:

Residency No. 10-A extends from the east line of Orleans county to 100 feet east of Main street bridge in Gasport, a distance of 32.05 miles. Terminal contracts Nos. 39, 54 and 211 have been active during the year. Reports on these contracts follow.

Terminal Contract No. 39 — *Albion*

This contract is for constructing a terminal at Albion. It was awarded to Fred H. Rhodey, being signed on March 29, 1917. Construction work began in April, 1917. The engineer's preliminary estimate was $2,700.00, the contractor's bid, $2,952.50. The value of work done during the year is $618. The work was accepted December 19, 1917, and the final account, amounting to $2,718.40, was approved by the Canal Board January 23, 1918.

H. N. Metzger, Assistant Engineer, was in charge.

This terminal is located on the south side of the Barge canal, about 200 feet west of Main street and extends along the canal for a distance of about 330 feet. The contract provides for placing fenders and snubbing-posts on the existing dockwall, clearing and grading the terminal site and placing gravel surfacing over part of the area. Teams and scrapers were used for grading. Additional material for fill was secured from borrow-pits. The work was finished in October, 1917.

Terminal Contract No. 211

This contract is for constructing terminal warehouses at Newark, Albion and Medina. The following report pertains to the work at Albion and Medina. The contract was awarded to W. F. Martens & Co., Inc., being signed on June 4, 1917. The engineer's preliminary estimate for these two warehouses was $5,800.00 ($2,800.00 for Albion and $3,000.00 for Medina), the contractor's bid, $5,237.00 ($2,472.00 for Albion and $2,765.00 for Medina). The value of work done during the year is $2,891 ($2,176 at Albion and $715 at Medina). The work was accepted October 16, 1917, and the final account, amounting to $7,896.80 for the three houses ($2,435.80 for Albion and $2,735.30 for Medina), was approved by the Canal Board January 23, 1918. The amount paid on extra work orders at these two places during the year is $98.55 ($48.93 at Albion and $49.62 at Medina), total to date, the same.

H. N. Metzger, Assistant Engineer, was in charge.

An extra work order dated July 23, 1917, provides for placing wire screens over the windows and doors of the warehouses. The final account, amounting to $147.48 for the three houses ($48.93

for Albion and $49.62 for Medina), was approved by the Canal Board June 12, 1918.

At Albion all the work was done during the year except constructing the foundation, which was placed in June of the previous year.

At Medina the work was completed the previous year with the exception of the painting and electrical work.

Terminal Contract No. 54 — *Middleport*

This contract is for constructing a terminal at Middleport. It was awarded to the Hammond-Tracy Construction Co., Inc., being signed on March 27, 1917. The engineer's preliminary estimate was $1,250.00, the contractor's bid, $1,234.00. The value of work done during the year is $412. The work was accepted December 19, 1917, and the final account, amounting to $1,052.25, was approved by the Canal Board January 23, 1918.

H. N. Metzger, Assistant Engineer, was in charge.

The work this year consisted in the placing of the lining only. The other work called for under the contract was finished last year.

ERIE CANAL, RESIDENCY No. 10-B

Senior Assistant Engineer B. E. Failing, reports:

This residency extends from a point about 100 feet east of the Gasport bridge westward to the Sulphur Springs guard-lock, a distance of 11.7 miles. Contract No. 98 and terminal contract No. 210 and portions of Nos. 101 and 106 have been active during the year. Reports on these contracts follow.

Contract No. 98

This contract is for constructing a lift-bridge at Adams street and removing the lift-bridge at Chapel street, Lockport, etc. The contract was awarded to the Tifft Construction Co., Inc., being signed on November 24, 1916. The engineer's preliminary estimate was $77,496.60, the contractor's bid, $82,276.25. The contract price as modified by alteration No. 1 is $82,426.25. The value of work done during the year is $53,440, total to date,

$73,690. The amount paid on extra work orders during the year is $500.00, total to date, the same.

H. N. Metzger, Assistant Engineer, is in charge.

Alteration No. 1 eliminates the storage tank provided for the pumping system and provides for installing city water to take the place thereof. It increases the contract price by $150.00.

An extra work order dated November 7, 1917, provides for a Terrill voltage regulator in the power-house at lock No. 34. The final account, amounting to $500.00, was approved by the Canal Board June 19, 1918.

An extra work order dated April 29, 1918, provides for embankment in front of the State yards at Lockport, payment to be made on the basis of cost plus 15 per cent.

The work done during the year consisted in finishing the wingwalls and operator's cabin at Adams street and in removing the bridge, coping walls, deepening and widening the canal and doing the necessary grading at Chapel street. The steelwork at Adams street was erected by the Lackawanna Bridge Co. The bridge itself was finished and put in operation at the opening of navigation this year. The contract has been finished with the exception of some work on the approaches.

Terminal Contract No. 210

This contract is for constructing frame warehouses on the upper and lower terminals at Lockport. Each warehouse has a floor space 32 feet by 100 feet. The contract was awarded to the Savage Construction Company, being signed on June 1, 1917. The engineer's preliminary estimate was $9,955.00, the contractor's bid, $9,903.00. Excess excavation to the value of $45.00 has been authorized by the Canal Board. The value of work done during the year is $5,725. The work was accepted October 23, 1917, and the final account, amounting to $9,765.00, was approved by the Canal Board December 4, 1917. The amount paid on extra work orders during the year is $79.48, total to date, the same.

H. N. Metzger, Assistant Engineer, was in charge.

An extra work order dated July 23, 1917, provides for placing wire screens over windows and doors. The final account, amounting to $79.48, was approved by the Canal Board November 9, 1917.

The warehous at the upper terminal was painted and the electrical work done this year, the other work being completed the previous year. At the lower terminal, all the work was done this year with the exception of the foundation.

Terminal Contract No. 101

This contract is for furnishing and installing steel stiff-leg derricks on terminal sites at Albany, Whitehall, Little Falls, Rome, Lockport and Tonawanda. The following report relates to the work at Lockport. The contract was awarded to E. Brown Baker, being signed on December 18, 1916. On February 21, 1917, it was assigned to the Mohawk Dredge & Dock Co., Inc., and this assignment was approved by the Superintendent of Public Works March 26, 1917. The engineer's preliminary estimate for the derrick at Lockport was $3,477.90, the contractor's bid, $5,028.90. Excess metal (Lockport) to the value of $966.00 has been authorized by the Canal Board. The value of work done at Lockport during the year is $5,390.00, total done to date, the same.

This derrick has been installed at the lower terminal. It has a capacity of fifteen tons.

Terminal Contract No. 106

This contract is for furnishing fourteen two-ton steam tractor cranes for Barge canal terminals. One of these is for use at Lockport. The contract was awarded to the John F. Byers Machine Co., being signed on February 14, 1918. The engineer's preliminary estimate was $5,250.00 per crane, the contractor's bid, $5,265.00. The contract price as modified by alteration No. 1 is $5,515.00 per crane. The value of work done at Lockport during the year is $5,515, done to date, the same.

Alteration No. 1, approved by the Canal Board March 27, 1918, provides for housing the fourteen cranes under this contract. It increases the contract price by $250.00 per crane.

This crane has been delivered.

ERIE CANAL, RESIDENCY NO. 11

Senior Assistant Engineer B. E. Failing reports:

Residency No. 11 extends from the Sulphur Springs guard-lock at Pendleton to and through the city of Buffalo. Contracts Nos. 19-A, 83 and 147, portions of Nos. 172 and 173, terminal contracts Nos. 21, 21-P, 53, 61, 62, 66 and 209 and portions of terminal contracts Nos. 101 and 106 have all been active during the year, excepting terminal contract No. 62, which has been in force only since June 29. Reports on these contracts follow.

Contract No. 19-A

This contract is for redredging, etc., on contract No. 19, from the guard-lock at Sulphur Springs to Tonawanda. It was awarded to H. S. Kerbaugh, Inc., being signed on November 3, 1916. On July 3, 1917, it was assigned to the Empire Engineering Co., Inc., and this assignment was approved by the Superintendent of Public Works August 14, 1917. Construction work began in May, 1917. The engineer's preliminary estimate was $152,200.00, the contractor's bid, $169,750.00. The value of work done during the year is $132,930, total done to date, $142,820. The amount paid on extra work orders during the year is $2,520.81, total to date, $3,980.39.

R. W. Cady , Assistant Engineer, is in charge.

An extra work order dated January 30, 1917, provides for repairing the temporary supports of New Home bridge. The final account, amounting to $1,947.21, was approved by the Canal Board November 9, 1917.

An extra work order dated August 13, 1917, provides for constructing tile drains for lands in the vicinity of the New Home bridge and Irish road. The final account, amounting to $604.68, was approved by the Canal Board April 24, 1918.

An extra work order dated March 29, 1918, provides for additional work in excavating foundation of the old north pier of the New Home bridge, and removing piles driven by the Superintendent of Public Works at this place. The final account, amounting to $1,428.50, was approved by the Canal Board April 24, 1918.

The side slopes along Tonawanda creek and the Barge canal were unstable and in several places had slid into the canal, causing sediment to be deposited above grade. These slides had also caused the failure of the abutments of the New Home bridge and the destruction at several places of the highway along the canal. This contract includes the rebuilding of the New Home bridge and of the highways destroyed, the trimming of the side slopes of the canal and the placing of riprap protection.

The New Home bridge and abutments were completed early this year. A 20-inch hydraulic dredge was put in operation in the fall of 1917 and has excavated in the prism since that time except when work was shut down from the middle of December till the latter part of March. The completion of the contract has been delayed by slides, some of which contained as much as forty or fifty thousand cubic yards of material and in some cases completely blocked the channel.

Under the extra work orders repairs to the temporory supports of the New Home bridge were completed this year, tile drains were laid in lands adjacent to this bridge and Irish road and additional work was done in excavating the foundation of the New Home bridge.

The only work remaining to be done consists in cleaning up the prism and finishing the road at Pendleton.

Contract No. 83

This contract is for completing the canal at Tonawanda and removing a guard-lock and coffer-dam near Sulphur Springs. It was awarded to the Mohawk Dredge and Dock Company, being signed on October 22, 1917. The engineer's preliminary estimate was $149,604.50, the contractor's bid, $216,915.00. The contract price as modified by alteration No. 1 is $216,615.00. The value of work done to date is $55,200. The amount paid on extra work orders is $2,700.00.

R. W. Cady, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board November 20, 1917, provides for the use of second-hand steel sheet-piling for the protection of the river pier of the Delaware avenue bridge. It decreases the contract price by $300.00.

An extra work order dated February 11, 1918, provides for a temporary dam across the old canal just west of Main street, Tonawanda, for maintaining navigation. The final account, amounting to $2,700.00, was approved by the Canal Board June 12, 1918.

The Tonawanda dam has been removed, a channel 12 feet deep and over 50 feet wide has been excavated to Tonawanda, the coffer-dam at Pendleton has been removed and the work of removing the old guard-lock at Pendleton is nearly complete. The work is being done by three derrick-boats, operating clam-shell buckets, and one dipper-dredge. The excavated material has been spoiled in the Government dumping grounds in Niagara river and in the back channels of Tonawanda creek. The steel sheet-piling protection for the river pier of the Delaware avenue bridge has been driven. The temporary dam across the old canal has been finished.

Contract No. 147

This contract is for constructing the substructure, superstructure and approaches of a bascule bridge across Tonawanda creek at Main and Webster streets, Tonawanda and North Tonawanda.

It was awarded to the Scherzer Rolling Lift Bridge Co., being signed on September 10, 1917. On June 5, 1918, it was assigned to Lathrop, Shea & Henwood Co., and this assignment was approved by the Superintendent of Public Works July 1, 1918. Construction work began in October, 1917. The engineer's preliminary estimate was $227,032.80, the contractor's bid, $223,986.30. The value of work done to date is $30,530. The amount paid on extra work orders is $3,644.50.

R. W. Cady, Assistant Engineer, is in charge.

An extra work order dated November 27, 1917, provides for driving 22 arch-web steel sheet-piles alongside the outside wooden piles for the temporary timber highway bridge. The final account, amounting to $2,975.00, was approved by the Canal Board June 5, 1918.

An extra work order dated April 29, 1918, provides for transporting and driving steel sheet-piling to protect the existing structure back of the north abutment. The final account, amounting to $660.50, was approved by the Canal Board June 5, 1918.

The temporary bridge for carrying traffic around the new structure was finished, the north abutment has been built up to an elevation above the water line and the construction of the coffer-dam for the south abutment has been started. The work under the two extra work orders has also been finished. Considerable delay has resulted from the difficulty of securing timbers for coffer-dams.

The work has been done by Lathrop, Shea & Henwood Co., subcontractors, up to the date of assignment.

Contract No. 172

The portion of this contract affecting this residency is for furnishing and delivering 40 red and 40 black barrel buoys and 15 red and 15 black lamp-posts at Tonawanda. It was awarded to Lupfer & Remick, being signed on March 15, 1918. The engineer's preliminary estimate for the whole contract was $14,853.00, the contractor's bid, $13,063.20. The contract price as modified by alteration No. 1 is $12,921.45. The value of work done to date on this residency is $5,540. The amount paid on extra work orders is $392.00.

R. W. Cady, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board May 23, 1918, eliminates the requirement for galvanizing the barrel hoops. It decreases the contract price by $141.75.

An extra work order dated April 4, 1918, provides for concrete anchors for buoys. The final account, amounting to $906,50 ($292.00 for this residency), was approved by the Canal Board June 27, 1918.

Eighty barrel buoys, with mooring cable, and thirty-four lamp-posts were delivered at Tonawanda about the time the canal was opened for navigation this year.

Contract No. 173

The portion of this contract affecting this residency is for furnishing and delivering at Tonawanda 140 oil-burning lanterns for buoy, stake and bridge lights on the Tonawanda river. It was awarded to R. B. Wing & Son, being signed on February 9, 1918. The engineer's preliminary estimate was $19.00 per lantern, or $2,660.00 for this residency, the contractor's bid, $17.92 per lantern, or $2,508.80 for this residency. On June 26, 1918, the Canal Board accepted the work and approved the final account, the amount being the same as the contractor's bid.

R. W. Cady, Assistant Engineer, was in charge.

These lanterns were delivered at about the time the canal was opened for navigation this year.

Terminal Contract No. 209

This contract is for constructing frame warehouses at Tonawanda and North Tonawanda. It was awarded to G. J. & P. L. Metzger, being signed on June 4, 1917. Construction work began in June, 1917. The engineer's preliminary estimate was $7,892.00, the contractor's bid, $7,535.00. Excess quantities to the value of $58.50 have been authorized by the Canal Board. The value of work done during the year is $6,979. The work was accepted October 3, 1917, and the final account, amounting to $7,459.10, was approved by the Canal Board December 4, 1917. The amount paid on extra work orders during the year is $83.54, total to date, the same.

R. W. Cady, Assistant Engineer, is in charge.

An extra work order dated July 16, 1917, provides for placing wire screens over the windows and doors of these warehouses. The final account, amounting to $83.54, was approved by the Canal Board November 9, 1917.

The warehouse at Tonawanda has a floor area 32 by 80 feet and the one at North Tonawanda, a floor area 24 by 100 feet. The foundations were finished prior to July 1, 1917, but all the other work has been done since that time. The contract was completed in August of 1917.

Terminal Contract No. 101

This contract is for furnishing and installing steel stiff-leg derricks on terminal sites at Albany, Whitehall, Little Falls, Rome, Lockport and Tonawanda. The following report relates to the derrick at Tonawanda. The contract was awarded to

E. Brown Baker, being signed on December 18, 1916. On February 21, 1917, it was assigned to the Mohawk Dredge & Dock Co., Inc., and this assignment was approved by the Superintendent of Public Works March 26, 1917. The engineer's preliminary estimate for the derrick at Tonawanda was $3,589.40, the contractor's bid, $5,140.40. Excess metal (Tonawanda) to the value of $966.00 has been authorized by the Canal Board. The value of work done at Tonawanda during the year is $5,330, total done to date, the same.

This derrick has been installed.

Terminal Contract No. 21 — *Erie Basin, Buffalo*

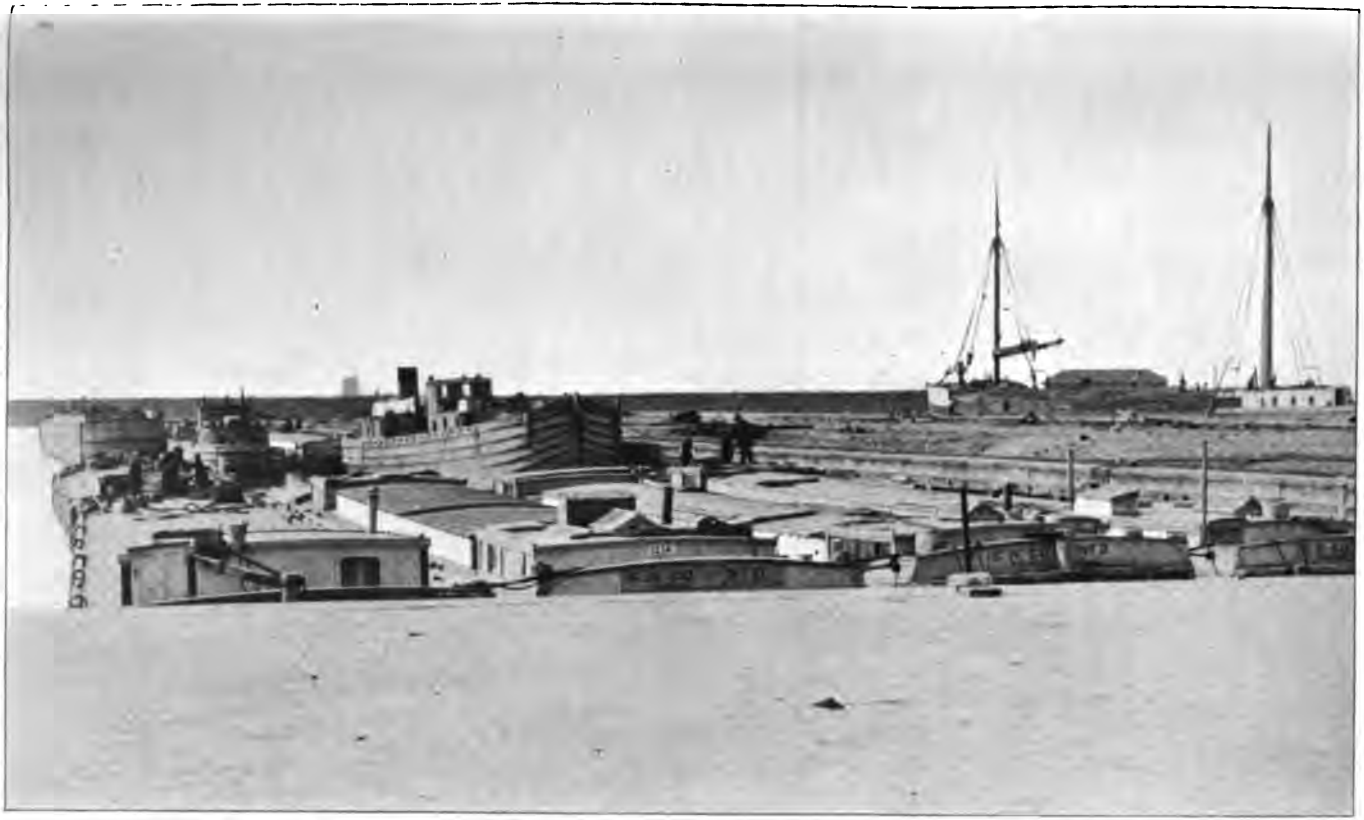
This contract is for constructing a terminal at Erie Basin, Buffalo. It was awarded to H. S. Kerbaugh, Inc., being signed on January 12, 1914. Construction work began in April, 1914. The engineer's preliminary estimate was $1,513,925.00, the contractor's bid, $798,605.80. The contract price as modified by alterations Nos. 1 and 2 is $797,772.30. The value of work done during the year is $81,940, total done to date, $642,060.

Elias H. Anderson, Assistant Engineer, is in charge.

Alteration No. 2, approved by the Canal Board March 20, 1918, provides for omitting the lining at the head of the slip and at the margin of the piers. It decreases the contract price by $4,200.00.

An extra work order dated March 29, 1918, provides for furnishing materials and performing work to construct a sewer and manhole, for placing conduits for electric wires, and also for furnishing and installing a water-main, payment to be made on the basis of cost plus 15 per cent.

The contract provides for excavating, to a depth of 23 feet at mean lake level, the entire area of the Erie basin between the New York State breakwater and the shore line, an area having a width of about 900 feet and extending from the 23-foot channel of the U. S. Government Black Rock harbor improvement southerly about 2,200 feet to the 23-foot entrance of the Buffalo river: also for the construction of two piers, pier No. 1 with a length



BARGE CANAL TERMINAL AT ERIE BASIN, BUFFALO

The Buffalo terminal is the logical point of transfer not only between lake and canal but also between certain rail lines and canal. Beyond the fleet of canal boats may be seen pier No. 1, at which lies a lake boat discharging a cargo of lumber.

of 600 feet and pier No. 2 with a length of 400 feet, extending from the shore into the basin. These piers are each 150 feet wide and have a clear distance between them of 250 feet. A concrete dockwall is built along the old dock line betwen the piers and also southerly from pier No. 2 to old canal slip No. 2 and northerly from pier No. 1 to slip No. 3, the entrance to which is widened. All of this is complete with the exception of 60,000 cubic yards of rock excavation. The work during the year consisted in building the steel sheet-piling dockwall along slip No. 3 and completing the backfill at pier No. 2. One dipper-dredge has been working during the year, stripping and removing the rock excavation; one drill-boat, carrying five drills and drilling three-inch holes, has worked three shifts throughout the year, except for the winter months, at which time operations were suspended on account of ice in the harbor.

Terminal Contract No. 21-P

This contract is for paving part of the terminal site at Erie basin, Buffalo. It was awarded to Henry P. Burgard Company, being signed on May 6, 1918. Construction work began in May, 1918. The engineer's preliminary estimate was $14,180.00, the contractor's bid, $14,350.00. The value of work done to date is $370.

Elias H. Anderson, Assistant Engineer, is in charge.

The work done has consisted in grading the site.

Terminal Contract No. 61

This contract is for constructing a railroad track approach to pier No. 1, Erie basin, Buffalo. It was awarded to the Walsh Construction Company, being signed on May 15, 1918. Construction work began in May, 1918. The engineer's preliminary estimate was $9,720.00, the contractor's bid, $11,650.00. The value of work done during the year is $1,470, total done to date, the same.

Elias H. Anderson, Assistant Engineer, is in charge.

During May and June the excavation and grading were completed and rails were delivered, but the contractor has been unable to secure ties.

Terminal Contract No. 62

This contract provides for constructing railroad tracks and crane rails on pier No. 1, Erie basin, Buffalo. It was awarded to the Walsh Construction Company, being signed on May 15, 1918. The engineer's preliminary estimate was $8,470.00, the contractor's bid, $11,400.00.

Elias H. Anderson, Assistant Engineer, is in charge.

Rails, switches and bumping posts have been delivered, but the laying of track has been delayed by the lack of ties.

Terminal Contract No. 66

This contract provides for placing riprap along the shore of Erie basin, between slip No. 2 and Lake street, Buffalo. It was awarded to the Empire Engineering Co., Inc., being signed on June 29, 1918. The engineer's preliminary estimate was $11,850.00, the contractor's bid, $12,820.00.

Elias H. Anderson, Assistant Engineer, is in charge.

No work has been done.

Terminal Contract No. 53 — *Ohio Basin, Buffalo*

This contract is for constructing a terminal at Ohio basin, Buffalo. It was awarded to the Walsh Construction Company, being signed on October 27, 1916. Construction work began in June, 1917. The engineer's preliminary estimate was $571,800.00, the contractor's bid, $532,584.00. The contract price as modified by alteration No. 1 is $597,984.00. The value of work done during the year is $57,280, total done to date, $68,370.

Elwin G. Speyer, Assistant Engineer, is in charge.

Alteration No. 1, approved by the Canal Board July 24, 1917, provides for changing the type of dockwall; for substituting third-class for second-class concrete; increasing the height of dockwall around the basin; improving Lackawanna slip by constructing dockwalls, dredging, etc., closing and unwatering Ohio basin during the navigation season; and for changing the design of mooring cleats on the dockwalls. It increases the contract price by $65,400.00.

An extra work order dated May 21, 1917, provides for installing a 50-kw. Buffalo General Electric Co.'s line panel, etc., at a lump sum price of $450.00.

The basin has been dredged to a depth of about 17 feet, but no excavation has been made in Dead creek. Steel sheet-piling was driven along the south side of the basin adjacent to the Erie tracks, preparatory to building a concrete retaining wall. The contractor's plant comprises one dipper-dredge with a 5-yard dipper, four dump-scows each having a capacity of 480 cu. yds., one tug, one traveling derrick, one scow, and a floating pile-driver.

The work on the coffer-dam was suspended on October 27, 1917, and on December 14 all contract work was stopped and has not been resumed. The contractor claims that on account of the war he has been unable to get material, supplies and labor.

Terminal Contract No. 106

This contract is for furnishing fourteen two-ton steam tractor cranes for Barge canal terminals. Two of these are for Buffalo and one for Tonawanda. The contract was awarded to the John F. Byers Machine Co., being signed on February 14, 1918. The engineer's preliminary estimate was $5,250.00 per crane, the contractor's bid, $5,265.00 per crane. The contract price as modified by alteration No. 1 is $5,515.00 per crane. One monthly estimate, amounting to $5,515.00, has been rendered for the work on this residency, on account of the crane at Tonawanda.

Alteration No. 1, approved by the Canal Board March 27, 1918, provides for housing the fourteen cranes under this contract. It increases the contract price by $250.00 per crane.

One crane has been delivered at Tonawanda and one at Buffalo. The other crane for Buffalo has been delivered at Rochester.

CONCLUSION

While construction conditions have been considerably affected by the war, the engineers have also had their difficulties. A number of valuable men having left the department, those who remained, though greatly reduced in numbers, have taken care of the increased work and are entitled to considerable credit.

I wish to thank these men in this division for the excellent ability and energy they have shown and for their coöperation in the work. I also wish to acknowledge the interest and support of the State Enginer, Frank M. Williams, and of the Special Deputy State Engineer, D. B. La Du, who have personally inspected the work many times and been constantly in touch with its progress, and through whose efforts the opening of the canal for navigation last spring was made possible.

A statement of the engineering expenses of the division follow.

Respectfully submitted,

F. P. WILLIAMS,

Division Engineer.

THE FOLLOWING STATEMENTS SHOW THE NAME, RANK AND COMPENSATION OF ENGINEERS IN THE WESTERN DIVISION OF THE DEPARTMENT OF THE STATE ENGINEER AND SURVEYOR, TOGETHER WITH INCIDENTAL EXPENSES FOR THE FISCAL YEAR ENDED JUNE 30, 1918.

Ordinary Repairs to Canals — Erie Canal

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
F. P. Williams	Division engineer	$4,800 per year	$4,800 00	$538 32	$5,338 32
Waldo G. Wildes	Senior assistant engineer	3,300 per year	2,732 26	....	2,732 26
Anna M. Lorscheider	Stenographer	1,500 per year	1,462 50	....	1,462 50
L. John Long	Junior assistant engineer	1,320 per year	17 74	....	17 74
E. Quans	Office assistant	1,020 per year	85 00	....	85 00
Lewis Van Allen	Laborer	2 50 per day	2 50	....	2 50
			$9,100 00	$538 32	$9,638 32
	Incidental Expenses				
Stationery and printing				$28 00	
Livery				11 50	
Postage				14 86	
Office rent				40 00	
Telephone and telegraph				98 25	
Miscellaneous				169 07	
					361 68
Total					$10,000 00

Construction of Barge Canal — Erie Canal

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of comqensation	Services	Travel	Total
Waldo G. Wildes	Senior assistant engineer	$3,300 per year	$275 00	$53 29	$328 29
B. E. Failing	Senior assistant engineer	3,300 per year	1,467 50	85 55	1,553 05
L. S. Hulburd	Senior assistant engineer	3,300 per year	2,774 00	83 25	2,857 25
A. R. Morse	Senior assistant engineer	3,060 per year	2,840 00	41 50	2,881 50
A. E. Steere	Senior assistant engineer	3,300 per year	3,080 00	130 57	3,210 57
Lewis A. Keil	Cashier	2,100 per year	2,025 00	5 08	2,030 08
Frank V. Searls	Estimate clerk	1,920 per year	1,415 51	....	1,415 51
Edith Schoelles Fogle	Stenographer	999 96 per year	416 65	....	416 65
W. D. Gartland	Stenographer	1,200 per year	1,200 00	....	1,200 00
Lucy Leverich	Stenographer	900 per year	41 13	....	41 13
Mary MacArthur	Stenographer	1,200 per year	200 00	....	200 00
M. Agnes Maloney	Stenographer	900 per year	75 00	....	75 00
Victor M. O'Neill	Stenographer	999 96 per year	489 23	....	489 23
Elisabeth S. White	Stenographer	1,080 per year	1,033 31	....	1,033 31
C. L. Baldwin	Assistant engineer	2,580 per year	2,440 00	126 79	2,566 79
D. E. Bellows	Assistant engineer	2,580 per year	2,520 00	738 18	3,258 18
W. W. Brown	Assistant engineer	2,160 per year	2,115 00	183 80	2,298 80
R. W. Cady	Assistant engineer	2,580 per year	2,297 32	810 70	3,108 02
R. D. Cameron	Assistant engineer	2,160 per year	2,115 00	....	2,115 00
C. R. De Graff	Assistant engineer	2,580 per year	1,021 35	25 10	1,046 45
Gordon Edson	Assistant engineer	2,580 per year	2,440 00	13 50	2,453 50
C. E. Elmendorf	Assistant engineer	2,580 per year	1,118 94	5 60	1,124 54
L. G. Fisher	Assistant engineer	2,340 per year	2,263 00	22 70	2,285 70
H. A. Helling	Assistant engineer	1,980 per year	292 74	11 90	304 64
F. W. Madigan	Assistant engineer	2,580 per year	2,330 43	641 52	2,971 95
Frank T. Marsh	Assistant engineer	2,340 per year	2,195 06	....	2,195 06
H. N. Metzger	Assistant engineer	2,340 per year	1,080 69	234 75	1,315 44
A. S. Milinowski	Assistant engineer	2,580 per year	1,918 75	104 87	2,023 62
Lester P. Slade	Assistant engineer	2,160 per year	2,115 00	....	2,115 00
Elwin G. Speyer	Assistant engineer	2,340 per year	220 42	126 50	346 92
J. Seward Summers	Assistant engineer	2,580 per year	1,944 32	59 51	2,003 83
Arthur S. Whitbeck	Assistant engineer	2,580 per year	2,513 50	53 22	2,566 72

Construction of Barge Canal — Erie Canal — (Continued)

Chapter 147, Laws of 1903, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
F. J. Wilbur	Assistant engineer	$2,580 per year	$1,554 84	....	$1,554 84
R. W. Anderson	Junior assistant engineer	1,440 per year	1,370 00	....	1,370 00
E. C. Ansley	Junior assistant engineer	1,800 per year	1,291 71	$25 50	1,317 21
David Arbeit	Junior assistant engineer	1,200 per year	506 45	....	506 45
Morris Berkenblit	Junior assistant engineer	1,110 per year	234 33	....	234 33
David L. Breinin	Junior assistant engineer	1,200 per year	280 00	....	280 00
H. A. Brown	Junior assistant engineer	1,320 per year	1,004 33	....	1,004 33
Wm. F. Burke	Junior assistant engineer	1,320 per year	1,173 00	....	1,173 00
W. J. Burns	Junior assistant engineer	1,800 per year	1,711 94	....	1,711 94
A. B. Chappell	Junior assistant engineer	1,680 per year	1,610 00	....	1,610 00
E. A. Close	Junior assistant engineer	1,560 per year	628 57	....	628 57
Clarence M. Colony	Junior assistant engineer	1,560 per year	1,383 98	9 55	1,393 53
J. F. Cullen	Junior assistant engineer	1,200 per year	890 83	....	890 83
Thomas L. Curtin	Junior assistant engineer	1,200 per year	362 10	....	362 10
Earle E. R. Dornback	Junior assistant engineer	1,320 per year	900 30	....	900 30
Philip Drabkin	Junior assistant engineer	1,200 per year	364 60	....	364 60
Walter G. Dubey	Junior assistant engineer	1,320 per year	3 55	....	3 55
John J. Dunne	Junior assistant engineer	1,320 per year	1,227 50	....	1,227 50
J. R. Eckhardt	Junior assistant engineer	1,680 per year	1,650 00	....	1,650 00
J. Frank Egan	Junior assistant engineer	1,320 per year	859 68	....	859 68
Fred C. Facer	Junior assistant engineer	1,800 per year	1,730 00	....	1,730 00
Joseph Friedman	Junior assistant engineer	1,200 per year	1,116 13	....	1,116 13
George Fuller	Junior assistant engineer	1,800 per year	684 85	4 90	689 75
L. P. M. Gaylord	Junior assistant engineer	1,200 per year	333 33	....	333 33
W. H. Ginnity	Junior assistant engineer	1,800 per year	1,621 45	....	1,621 45
G. J. Goets	Junior assistant engineer	1,200 per year	287 09	....	287 09
W. B. Green	Junior assistant engineer	1,440 per year	1,290 00	....	1,290 00
Charles E. Heydt	Junior assistant engineer	1,320 per year	46 13	....	46 13
Joseph W. Howe	Junior assistant engineer	1,560 per year	1,490 00	....	1,490 00
H. A. Ingersoll	Junior assistant engineer	1,560 per year	287 74	....	287 74
Max Jasper	Junior assistant engineer	1,200 per year	390 54	....	390 54
Edward J. Kelley	Junior assistant engineer	1,320 per year	1,250 00	....	1,250 00
Fred. G. Kimball	Junior assistant engineer	1,440 per year	1,386 00	12 66	1,398 66
Louis Koterwas	Junior assistant engineer	1,320 per year	667 86	....	667 86
Michael Kovar	Junior assistant engineer	1,320 per year	1,227 50	....	1,227 50
J. F. Larney	Junior assistant engineer	1,200 per year	760 00	....	760 00
L. John Long	Junior assistant engineer	1,320 per year	1,272 26	220 73	1,492 99
F. B. McLean	Junior assistant engineer	1,200 per year	1,070 97	....	1,070 97
Frank J. McMahon	Junior assistant engineer	1,200 per year	1,200 00	....	1,200 00
A. Mattison	Junior assistant engineer	1,200 per year	483 33	....	483 33
S. A. Miller	Junior assistant engineer	1,680 per year	1,540 00	....	1,540 00
W. R. Miller	Junior assistant engineer	1,440 per year	617 99	....	617 99
Dana M. Miner	Junior assistant engineer	1,800 per year	1,280 00	....	1,280 00
C. V. O'Malley	Junior assistant engineer	1,800 per year	493 23	37 28	530 51
Abraham Oster	Junior assistant engineer	1,110 per year	44 75	....	44 75
O. M. Peavy	Junior assistant engineer	1,200 per year	94 84	....	94 84
John J. Phalan	Junior assistant engineer	1,320 per year	673 51	2 01	675 52
O. J. Pierce	Junior assistant engineer	1,440 per year	1,410 00	....	1,410 00
Earl Polmateer	Junior assistant engineer	1,200 per year	347 21	....	347 21
G. M. Quackenbush	Junior assistant engineer	1,200 per year	713 49	....	713 49
W. W. Redfern	Junior assistant engineer	1,200 per year	750 75	14 40	765 15
Harry Rubin	Junior assistant engineer	1,200 per year	1,029 11	....	1,029 11
Daniel Salmow	Junior assistant engineer	1,200 per year	87 10	....	87 10
M. B. Severance	Junior assistant engineer	1,560 per year	164 03	....	164 03
D. T. Simpson	Junior assistant engineer	1,680 per year	1,610 00	....	1,610 00
J. A. Sloat	Junior assistant engineer	1,800 per year	1,770 00	105 83	1,875 83
Jacob Smertenko	Junior assistant engineer	1,200 per year	1,177 50	....	1,177 50
Tracy B. Smith	Junior assistant engineer	1,800 per year	1,284 67	....	1,284 67
I. L. Stalker	Junior assistant engineer	1,320 per year	85 17	....	85 17
C. J. Sullivan	Junior assistant engineer	1,320 per year	660 00	....	660 00
J. R. Tighe	Junior assistant engineer	1,320 per year	238 45	....	238 45
H. R. Topping	Junior assistant engineer	1,800 per year	1,325 32	37 46	1,362 78
Edmond A. Weiss	Junior assistant engineer	1,200 per year	966 67	....	966 67
H. J. Whitman	Junior assistant engineer	1,800 per year	1,730 00	....	1,730 00
S. E. Whitney	Junior assistant engineer	1,200 per year	825 81	....	825 81
Oswald R. Whyte	Junior assistant engineer	1,200 per year	378 81	....	378 81
E. N. Woodward	Junior assistant engineer	1,200 per year	32 26	....	32 26
W. J. Zabel	Junior assistant engineer	1,680 per year	1,540 00	7 46	1,547 46
Charles R. Zorsch	Junior assistant engineer	1,800 per year	1,453 39	....	1,453 39
Lynn H. Barrows	Engineering assistant	1,080 per year	1,065 00	....	1,065 00
Edgar M. Birdsall	Engineering assistant	810 per year	469 00	....	469 00
Ernest Budlong	Engineering assistant	840 per year	36 13	....	36 13
E. J. Bullis	Engineering assistant	960 per year	144 52	....	144 52

Construction of Barge Canal — Erie Canal — (Continued)

Chapter 147, Laws of 1917, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
Harry Coniff	Engineering assistant	$1,020 per year	$837 56	....	$837 56
E. J. Greiner	Engineering assistant	960 per year	508 30	....	508 30
F. G. Hempel	Engineering assistant	1,020 per year	990 83	$327 85	1,318 68
P. M. Howe	Engineering assistant	960 per year	168 00	....	168 00
H. F. Kinney	Engineering assistant	960 per year	472 52	....	472 52
Solomon Leibowitz	Engineering assistant	840 per year	177 33	....	177 33
W. F. Lysett	Engineering assistant	1,080 per year	1,006 00	....	1,006 00
Edward J. Moran	Engineering assistant	840 per year	20 32	....	20 32
J. E. Morrell	Engineering assistant	960 per year	316 06	5 63	321 69
F. J. O'Connor	Engineering assistant	1,080 per year	1,065 00	....	1,065 00
L. T. Phillips	Engineering assistant	1,020 per year	204 00	....	204 00
Joseph J. Raduciner	Engineering assistant	840 per year	28 00	....	28 00
M. M. Seidman	Engineering assistant	840 per year	180 50	....	180 50
Frank M. Sisson	Engineering assistant	1,020 per year	376 19	....	376 19
R. R. Stevens	Engineering assistant	840 per year	195 09	....	195 09
Hugh J. Weir	Engineering assistant	1,020 per year	622 76	....	622 76
H. B. Finan	Inspector of engineering works	1,560 per year	1,178 67	....	1,178 67
George M. Harrer	Inspector of engineering works	1,560 per year	1,500 72	....	1,500 72
C. M. Leet	Inspector of engineering works	1,560 per year	712 90	....	712 90
James Sim	Inspector of engineering works	1,560 per year	1,560 00	....	1,560 00
W. A. Walter	Inspector of engineering works	1,560 per year	1,560 00	....	1,560 00
H. Kimball Benedict	Boatman	3 00 per day	561 00	....	561 00
W. A. Bright	Boatman	3 00 per day	529 00	....	529 00
Carl F. Doty	Boatman	3 00 per day	75 00	....	75 00
Edgar W. Fennie	Boatman	3 00 per day	3 00	....	3 00
Ernest F. Hamilton	Boatman	3 00 per day	943 00	....	943 00
John Hano	Boatman	3 00 per day	18 00	....	18 00
Samuel Kaiser	Boatman	3 00 per day	108 00	....	108 00
Arthur Knapp	Boatman	3 00 per day	725 50	....	725 50
C. Kumro	Boatman	3 00 per day	942 00	....	942 00
J. H. McCabe	Boatman	3 00 per day	945 00	....	945 00
M. McConnell	Boatman	3 00 per day	363 00	....	363 00
David R. Petrikin	Boatman	3 00 per day	66 00	....	66 00
John Riley	Boatman	3 00 per day	930 00	....	930 00
Richard Stanton	Boatman	3 00 per day	951 00	....	951 00
Frank W. Wadley	Boatman	3 00 per day	593 00	....	593 00
Freeman S. Barclay	Laborer	2 50 per day	560 00	....	560 00
Wm. A. Brick	Laborer	2 50 per day	787 50	....	787 50
Paul Buck	Laborer	2 50 per day	280 00	....	280 00
M. J. Connolly	Laborer	2 50 per day	530 00	....	530 00
Sidney Z. Davidson	Laborer	2 50 per day	25 00	....	25 00
H. J. Fisk	Laborer	2 50 per day	272 50	....	272 50
John F. Gilbert	Laborer	2 50 per day	652 50	....	652 50
Ralph Whitney Gosnell	Laborer	2 50 per day	22 50	....	22 50
Raymond J. Golding	Laborer	2 50 per day	715 00	....	715 00
Francis E. Green	Laborer	2 50 per day	127 50	....	127 50
Smith Hulburt	Laborer	2 50 per day	877 50	....	877 50
Henry J. Killian	Laborer	2 50 per day	777 50	....	777 50
Edwin Krapf	Laborer	2 50 per day	542 50	....	542 50
Lester Lavine	Laborer	2 50 per day	905 00	....	905 00
Raymond M. Lynd	Laborer	2 50 per day	160 00	....	160 00
Edward F. Murr	Laborer	2 50 per day	852 50	....	852 50
G. A. Nusbaum	Laborer	2 50 per day	165 00	....	165 00
Leo Palmisano	Laborer	2 50 per day	162 50	....	162 50
B. D. Patterson	Laborer	2 50 per day	372 50	....	372 50
Raymond J. Quandt	Laborer	2 50 per day	580 00	....	580 00
Carlton F. Reule	Laborer	2 50 per day	205 00	....	205 00
Matthew Rigney	Laborer	2 50 per day	62 50	....	62 50
Raymond J. Riley	Laborer	2 50 per day	860 00	....	860 00
George D. Rivers	Laborer	2 50 per day	335 00	....	335 00
W. H. Rundle	Laborer	2 50 per day	387 50	....	387 50
James Spillman	Laborer	2 50 per day	135 00	....	135 00
Elmer R. Stoll	Laborer	2 50 per day	550 00	....	550 00
James A. Sullivan	Laborer	2 50 per day	32 50	....	32 50
Sydney W. Towe	Laborer	2 50 per day	150 00	....	150 00
Lewis Van Allan	Laborer	2 50 per day	790 00	....	790 00
E. R. Weed	Laborer	2 50 per day	585 00	....	585 00
John Zingierski	Laborer	2 50 per day	10 00	....	10 00
John J. Nugent	Chauffeur	1,500 per year	1,400 00	139 86	1,539 86
E. Quans	Office assistant	1,020 per year	924 03	....	924 03
J. Horton Begy	Gage reader	120 per year	120 00	....	120 00
H. K. Compson	Gage reader	84 per year	84 00	....	84 00

Construction of Barge Canal — Erie Canal — (Concluded)

Chapter 147, Laws of 1917, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
C. H. Harrison	Gage reader	$60 per year	$60 00	....	$60 00
Patrick J. Slavin	Gage reader	60 per year	60 00	....	60 00
Homer Snell	Gage reader	72 per year	72 00	....	72 00
Carl Tuscher	Gage reader	60 per year	60 00	....	60 00
			$151,598 73	$4,509 00	$156,107 73
Incidental Expenses					
Instruments and tools				$58 42	
Office rent				4,314 50	
Fuel and light				156 01	
Stationery and printing				163 71	
Postage				376 29	
Telephone and telegraph				1,372 12	
Miscellaneous				9,017 77	
					15,458 82
Total					$171,566 55

Construction of Barge Canal Terminals

Chapter 746, Laws of 1911, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
B. E. Failing	Senior assistant engineer	$3,300 per year	$1,467 50	$89 60	$1,557 10
L. S. Hulburd	Senior assistant engineer	3,060 per year	306 00	....	306 00
F. V. Searls	Estimate clerk	1,920 per year	268 22	....	268 22
Edith S. Fogle	Stenographer	999 96 per year	294 15	....	294 15
M. Agnes Maloney	Stenographer	900 per year	75 00	....	75 00
Elias H. Anderson	Assistant engineer	2,580 per year	2,125 40	4 66	2,130 06
R. W. Cady	Assistant engineer	2,208 per year	29 68	....	29 68
C. E. Elmendorf	Assistant engineer	2,340 per year	959 90	5 00	964 90
H. A. Helling	Assistant engineer	1,980 per year	31 94	6 60	38 54
H. N. Metzger	Assistant engineer	2,340 per year	731 19	131 54	862 73
Elwin G. Speyer	Assistant engineer	2,340 per year	1,152 74	38 90	1,191 64
J. S. Summers	Assistant engineer	2,580 per year	495 68	20	495 88
F. J. Wilbur	Assistant engineer	2,580 per year	860 00	....	860 00
C. J. Bean	Junior assistant engineer	1,800 per year	1,500 06	....	1,500 06
E. A. Close	Junior assistant engineer	1,440 per year	594 33	....	594 33
E. E. R. Dornbach	Junior assistant engineer	1,110 per year	20 89	....	20 89
Walter G. Dubey	Junior assistant engineer	1,440 per year	1,316 41	....	1,316 41
W. H. Ginnity	Junior assistant engineer	1,680 per year	38 55	....	38 55
G. J. Goetz	Junior assistant engineer	1,200 per year	48 39	....	48 39
Charles E. Heydt	Junior assistant engineer	1,320 per year	63 87	....	63 87
H. A. Ingersoll	Junior assistant engineer	1,560 per year	135 25	....	135 25
F. B. McLean	Junior assistant engineer	1,200 per year	89 04	....	89 04
W. R. Miller	Junior assistant engineer	1,440 per year	752 01	....	752 01
Abraham Oster	Junior assistant engineer	1,200 per year	72 82	....	72 82
W. W. Redfern	Junior assistant engineer	1,200 per year	371 69	....	371 69
Daniel Salmow	Junior assistant engineer	1,200 per year	177 20	....	177 20
M. B. Severance	Junior assistant engineer	1,560 per year	768 08	....	768 08
Tracy B. Smith	Junior assistant engineer	1,800 per year	485 33	....	485 33
I. L. Stalker	Junior assistant engineer	1,440 per year	891 49	....	891 49
Harry J. Turner	Junior assistant engineer	1,200 per year	219 36	....	219 36
Oswald R. Whyte	Junior assistant engineer	1,200 per year	211 29	....	211 29
E. N. Woodward	Junior assistant engineer	1,200 per year	19 35	....	19 35
Charles R. Zorsch	Junior assistant engineer	1,800 per year	154 67	1 60	156 27
Harry Coniff	Engineering assistant	1,020 per year	116 44	....	116 44
Edward J. Moran	Engineering assistant	840 per year	11 29	....	11 29
J. E. Morrell	Engineering assistant	960 per year	276 00	....	276 00
F. M. Sisson	Engineering assistant	1,020 per year	5 48	....	5 48
R. R. Stevens	Engineering assistant	840 per year	99 36	....	99 36

Construction of Barge Canal Terminals — (Continued)

Chapter 746, Laws of 1911, and amendatory laws

NAME	Rank	Rate of compensation	Services	Travel	Total
Hugh J. Weir	Engineering assistant	$960 per year	$344 17		$344 17
George M. Harrer	Inspector of engineering works	1,560 per year	42 36		42 36
C. M. Leet	Inspector of engineering works	1,560 per year	457 10		457 10
Edgar W. Fennie	Boatman	3 00 per day	528 00		528 00
Samnel Kaiser	Boatman	3 00 per day	57 00		57 00
Arthur Knapp	Boatman	3 00 per day	199 00		199 00
C. Kumro	Boatman	3 00 per day	30 00		30 00
J. H. McCabe	Boatman	3 00 per day	39 00		39 00
David R. Petrikin	Boatman	3 00 per day	652 00	$1 10	653 10
H. Kimball Benedict	Laborer	2 50 per day	10 00		10 00
Paul Buck	Laborer	2 50 per day	62 50		62 50
John I. Carter	Laborer	2 50 per day	242 50		242 50
John R. Davis	Laborer	2 50 per day	347 50		347 50
Francis E. Green	Laborer	2 50 per day	5 00		5 00
H. J. Killian	Laborer	2 50 per day	5 00		5 00
Raymond M. Lynd	Laborer	2 50 per day	17 50		17 50
George D. Rivers	Laborer	2 50 per day	7 50		7 50
W. H. Rundle	Laborer	2 50 per day	392 50		392 50
John Zingierski	Laborer	2 50 per day	270 00		270 00
			$20,944 68	$279 20	$21,223 88
Incidental Expenses					
Instruments and tools				$4 00	
Office rent				1,110 00	
Fuel and light				64 37	
Stationery and printing				1 35	
Postage				50 62	
Telephone and telegraph				182 47	
Express and freight				15 62	
Miscellaneous				1,262 39	
					2,690 82
Total					$23,914 70

Canisteo River Improvement

Chapter 750, Laws of 1913; chapter 728, Laws of 1915; chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
Waldo G. Wildes	Senior assistant engineer	$3,300 per year	$17 74	$5 80	$23 54
H. R. Topping	Junior assistant engineer	1,800 per year	9 68	5 55	15 23
			$27 42	$11 35	$38 77
Incidental Expenses					
Livery				$2 00	
					2 50
Total					$41 27

Chadakoin River Improvement

Chapter 758, Laws of 1913; chapter 728, Laws of 1915; chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
C. R. DeGraff	Assistant engineer	$2,340 per year	$417 36	$12 76	$430 12
Thomas L. Curtin	Junior assistant engineer	1,320 per year	526 45	26 02	552 47
W. W. Redfern	Junior assistant engineer	1,200 per year	6 67	....	6 67
Oswald R. Whyte	Junior assistant engineer	1,200 per year	36 67	21 39	58 06
Paul Buck	Laborer	2 50 per day	5 00	....	5 00
Horace S. Butts	Gage reader	120 per year	120 00	....	120 00
			$1,112 15	$60 17	$1,172 32
Incidental Expenses					
Postage				$1 02	
Miscellaneous				8 52	
					9 54
Total					$1,181 86

Ellicott Creek Improvement

Chapter 624, Laws of 1913; chapter 728, Laws of 1915; chapters 181 and 760, Laws of 1917.

NAME	Rank	Rate of compensation	Services	Travel	Total
H. A. Ingersoll	Junior assistant engineer	$1,440 per year	$16 00	....	$16 00
Abraham Oster	Junior assistant engineer	1,110 per year	3 08	....	3 08
			$19 08	....	$19 08
Incidental Expenses					
Stationery and printing				$44 60	
					$44 60
Total					$63 68

Hertel Avenue Bridge, Buffalo

Chapter 761, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
Elias H. Anderson	Assistant engineer	$2,580 per year	$116 71	$5 70	$122 41
Elwin G. Speyer	Assistant engineer	2,208 per year	24 53	....	24 53
C. J. Bean	Junior assistant engineer	1,800 per year	14 52	....	14 52
Walter G. Dubey	Junior assistant engineer	1,440 per year	42 71	....	42 71
I. L. Stalker	Junior assistant engineer	1,440 per year	203 34	30	203 64
			$401 81	$6 00	$407 81
Incidental Expenses					
Stationery and printing				$64 86	
Miscellaneous				1 55	
					66 41
Total					$474 22

Eighteen-Mile Creek Culvert, Lockport

Chapters 181 and 626, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
C. R. DeGraff	Assistant engineer	$2,208 per year	$110 40	$7 91	$118 31
H. N. Metzger	Assistant engineer	2,340 per year	12 58	2 90	15 48
Total			$122 98	$10 81	$133 79

Blue Line Surveys

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
H. N. Metzger	Assistant engineer	$2,208 per year	$53 42	$47 70	$101 12
Elwin G. Speyer	Assistant engineer	2,208 per year	79 74	38 05	117 79
Thomas L. Curtin	Junior assistant engineer	1,110 per year	8 95	....	8 95
H. A. Ingersoll	Junior assistant engineer	1,560 per year	181 28	....	181 28
F. B. McLean	Junior assistant engineer	1,200 per year	22 58	....	22 58
Abraham Oster	Junior assistant engineer	1,110 per year	172 98	....	172 98
M. B. Severance	Junior assistant engineer	1,440 per year	118 58	....	118 58
Harry J. Turner	Junior assistant engineer	1,200 per year	82 15	....	82 15
Oswald R. Whyte	Junior assistant engineer	1,200 per year	16 67	....	16 67
George M. Harrer	Inspector of engineering works	1,560 per year	12 59	....	12 59
Edward J. Moran	Engineering assistant	840 per year	11 29	....	11 29
Paul Buck	Laborer	2 50 per day	25 00	....	25 00
John I. Carter	Laborer	2 50 per day	60 00	....	60 00
John Zingierski	Laborer	2 50 per day	60 00	....	60 00
			$905 23	$85 75	$990 98
Incidental Expenses					
Telephone and telegraph				$0 40	
Miscellaneous				14 29	
					14 69
Total					$1,005 67

Surveys for State Court of Claims

Chapter 181, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
B. E. Failing	Senior assistant engineer	$3,300 per year	$308 00	$97 04	$402 04
Elias H. Anderson	Assistant engineer	2,580 per year	111 37	8 21	119 58
F. W. Madigan	Assistant engineer	2,580 per year	189 57	59 13	248 70
Frank T. Marsh	Assistant engineer	2,208 per year	23 94	14 97	38 91
H. N. Metzger	Assistant engineer	2,340 per year	337 64	15 10	352 74
A. S. Milinowski	Assistant engineer	2,208 per year	36 61	9 60	46 21
Elwin G. Speyer	Assistant engineer	2,340 per year	69 95	45 17	115 12
Arthur S. Whitbeck	Assistant engineer	2,340 per year	6 50	3 15	9 65
C. M. Colony	Junior assistant engineer	1,560 per year	107 02	43 57	150 59
H. A. Ingersoll	Junior assistant engineer	1,560 per year	106 52	....	106 52
F. G. Kimball	Junior assistant engineer	1,440 per year	24 00	....	24 00
W. W. Redfern	Junior assistant engineer	1,200 per year	48 39	....	48 39
M. B. Severance	Junior assistant engineer	1,560 per year	27 86	....	27 86
Geo. M. Harrer	Inspector of engineering works	1,560 per year	4 33	....	4 33
Oswald R. Whyte	Junior assistant engineer	1,200 per year	39 46	....	39 46
E. J. Greiner	Engineering assistant	960 per year	2 67	....	2 67
F. G. Hempel	Engineering assistant	1,020 per year	14 17	....	14 17
John Riley	Boatman	3 00 per day	15 00	....	15 00
Paul Buck	Laborer	2 50 per day	15 00	....	15 00
M. J. Connolly	Laborer	2 50 per day	12 50	....	12 50
Lewis Van Allan	Laborer	2 50 per day	2 50	....	2 50
			$1,500 00	$295 94	$1,795 94
Incidental Expenses					
Stationery and printing				$1 25	
Livery				27 00	
Postage				45 84	
Office rent				55 00	
Telephone and telegraph				70 60	
Miscellaneous				4 37	
					204 06
Total					$2,000 00

Tonawanda Creek Survey, Batavia

Chapter 453, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
Waldo G. Wildes	Senior assistant engineer	$3,300 per year	....	$4 22	$4 22
A. S. Milinowski	Assistant engineer	2,340 per year	$327 64	169 26	496 90
E. C. Ansley	Junior assistant engineer	1,680 per year	354 74	59 65	414 39
William J. Burns	Junior assistant engineer	1,680 per year	18 06	....	18 06
Louis Koterwas	Junior assistant engineer	1,320 per year	56 77	....	56 77
Earl Polmateer	Junior assistant engineer	1,200 per year	262 47	....	262 47
G. M. Quackenbush	Junior assistant engineer	1,200 per year	12 90	....	12 90
E. M. Birdsall	Engineering assistant	840 per year	42 00	....	42 00
Francis A. Growney	Laborer	2 50 per day	102 50	....	102 50
			$1,177 03	$233 13	$1,410 21
Incidental Expenses					
Livery				$36 00	
Postage				1 09	
Telephone and telegraph				1 05	
Miscellaneous				201 65	
					239 79
Total					$1,650 00

Study of Route of Improved Erie Canal between Tonawanda and Buffalo

Chapter 743, Laws of 1917

NAME	Rank	Rate of compensation	Services	Travel	Total
Waldo G. Wildes	Senior assistant engineer	$3,300 per year	$275 00	....	$275 00
R. G. Finch	Chief clerk	4,500 per year	....	$28 18	28 18
Lewis A. Keil	Cashier	2,100 per year	....	4 41	4 41
Frank V. Searls	Estimate clerk	1,920 per year	206 27	....	206 27
Elias H. Anderson	Assistant engineer	2,580 per year	166 52	2 05	168 57
C. R. DeGraff	Assistant engineer	2,340 per year	777 89	8 01	785 90
C. E. Elmendorf	Assistant engineer	2,340 per year	106 94	....	106 94
Elwin G. Speyer	Assistant engineer	2,340 per year	400 73	68 60	469 33
F. J. Wilbur	Assistant engineer	2,340 per year	25 16	....	25 16
E. C. Ansley	Junior assistant engineer	1,680 per year	13 55	....	13 55
C. J. Bean	Junior assistant engineer	1,800 per year	255 42	....	255 42
E. A. Close	Junior assistant engineer	1,440 per year	65 81	....	65 81
Walter G. Dubey	Junior assistant engineer	1,320 per year	7 33	....	7 33
George Fuller	Junior assistant engineer	1,800 per year	222 41	....	222 41
H. A. Ingersoll	Junior assistant engineer	1,560 per year	300 16	....	300 16
Louis Koterwas	Junior assistant engineer	1,320 per year	53 23	....	53 23
G. M. Quackenbush	Junior assistant engineer	1,200 per year	12 90	....	12 90
M. B. Severance	Junior assistant engineer	1,560 per year	297 39	....	297 39
I. L. Stalker	Junior assistant engineer	1,440 per year	230 00	....	230 00
Harry J. Turner	Junior assistant engineer	1,200 per year	53 33	....	53 33
Oswald R. Whyte	Junior assistant engineer	1,200 per year	195 41	....	195 41
Charles R. Zorsch	Junior assistant engineer	1,680 per year	121 94	....	121 94
E. Quans	Office assistant	1,020 per year	10 97	....	10 97
C. Kumro	Boatman	3 00 per day	6 00	....	6 00
David R. Petrikin	Boatman	3 00 per day	6 00	....	6 00
Paul Buck	Laborer	2 50 per day	5 00	....	5 00
John I. Carter	Laborer	2 50 per day	45 00	....	45 00
John Zingierski	Laborer	2 50 per day	52 50	....	52 50
			$3,912 86	$111 25	$4,024 11
Incidental Expenses					
Livery				$4 00	
Miscellaneous				209 00	
					213 00
Total					$4,237 11

SUMMARY

The foregoing tables are summarized as follows:

Ordinary Repairs to Canals

1.	Erie canal, chapter 181, Laws of 1917	$10,000 00

Construction of Barge Canal

2.	Erie canal, chapter 147, Laws of 1903, and amendatory laws	171,566 55

Construction of Barge Canal Terminals

3.	Barge canal terminals, chapter 746, Laws of 1911, and amendatory laws	23,914 70

Special Work

4.	Canisteo river improvement, chapter 750, Laws of 1913; chapter 728, Laws of 1915; chapter 181, Laws of 1917	41 27
5.	Chadakoin river improvement, chapter 758, Laws of 1913; chapter 728, Laws of 1915; chapter 181, Laws of 1917	1,181 86
6.	Ellicott creek improvement, chapter 624, Laws of 1913; chapter 728, Laws of 1915; chapters 181 and 760, Laws of 1917	63 68
7.	Hertel avenue bridge, Buffalo, chapter 761, Laws of 1917	474 22
8.	Eighteen-Mile creek culvert, Lockport, chapters 181 and 626, Laws of 1917	133 79

Special Surveys

9.	Blue line surveys, chapter 181, Laws of 1917	1,005 67
10.	Surveys for State Court of Claims, chapter 181, Laws of 1917	2,000 00
11.	Tonawanda creek survey, Batavia, chapter 453, Laws of 1917	1,650 00
12.	Study of route of improved Erie canal between Tonawanda and Buffalo, chapter 743, Laws of 1917	4,237 11
	Total	$216,268 85

REPORT OF TESTS

REPORT OF THE LAND BUREAU

REPORT OF TESTS

Testing Laboratory — Geological Hall

Albany, N. Y., *July* 1, 1918.

Hon. Frank M. Williams, *State Engineer and Surveyor:*

Sir.— I have the honor to submit the following report of the testing laboratory of your Department for the fiscal year ended June 30, 1918.

The work of the laboratory continues to grow in variety and interest. The superstructures and apparatus being placed on the new Barge canal terminals have given new materials for inspection. So in addition to the regular testing of cement and concrete materials, which continue to form the bulk of the laboratory work, there have been many other kinds of material submitted for tests and analyses. Some special inspections of conditions of material in the field and in place have added to the extent of the value of the laboratory work.

Cement Tests

The work of testing cement has been not only to test that for use on the work of the Barge canal and the Barge canal terminals but has also been testing for other work under the direction of this Department, the Department of Architecture, and several other State departments. During the year there have been submitted to this laboratory and tested 2,668 samples of cement, representing 148,147 barrels of cement, of which 90.1 per cent were for the State Engineer's Department and 9.9 per cent for the State Architect and other departments. It was found that for promptness of inspection and delivery as well as economy it was advisable to permit shipments frequently to the State Architect and to other State work from some bin of cement which had been tested and accepted for use on Barge canal work. Considerable cement was so shipped under our inspection.

The inspection of cement at the mills has been a large part of the work of this bureau. Such inspection permits the taking of a smaller proportion of samples to the number of barrels represented. In addition to the saving of time and number of necessary samples, mill inspection prevents the delivery of any cement upon the work except that which has been tested and accepted. Because of these advantages there has been relatively less cement sampled after delivery upon the work this year than for many years past.

Each sample submitted, mixed in the proportion of one part cement to three parts standard quartz sand, was tested for tensile strength at 7- and 28-day periods. In addition to the tests for tensile strength, each lot of samples was given tests for fineness of grinding, for initial and hard sets, for specific gravity and for soundness by means of the steam tests, the normal-water test and the normal-air test. Frequently the cements were completely analyzed and are especially checked for sulphuric anhydride ($S O_3$) and magnesia ($Mg O$). Considerable compressive-strength testing has also been made on the samples submitted.

The methods used in making the tests and analyses of cements are practically those recommended by the Committee on Cement of the American Society for Testing Materials and adopted by that society as standard. A slight variation from that method is that, instead of using a blended sample for tests for tensile strength, we still use our own method of testing each sample separately for tensile strength. This method has long proven very satisfactory; in fact, by means of it, much poor cement has been discovered which would have stood the tests, had all of the samples of a lot been blended. It has been a special help in securing from the mills a cement that is uniform in quality. This method, however, makes necessary a larger equipment and a more complete system of operation than is necessary under the general method of testing the blended sample. The effort has been made to maintain this complete laboratory with as little expense as possible; and it has been acknowledged that the laboratory and its results are as complete and satisfactory as any laboratory making such large numbers of tests of cement.

The specifications for cement have followed closely for years those recommended by the American Society for Testing Materials, varying from them only in the detail of testing separate samples, rather than a blended sample.

At the end of the 7-day tests, all results obtained on tests of samples of cement proposed for use on Barge canal work are reported to Mr. D. B. La Du, Special Deputy State Engineer, and, if then thought best, are held for the 28-day tests, the lots being accepted or rejected according as the results show that the cement passes or fails to pass the tests. The reports of all tests of cement for all other department work (except Barge canal) are submitted to the Deputy State Engineer, William B. Landredth.

This laboratory has also been making a thorough study of the proposition to substitute compression tests of cement for the present tension tests and it is securing data which will help toward a wise decision on this question.

Of the cement tested and proposed for use, all was Portland cement. The brands represented are about as of recent years. Of the brands tested, 7 were manufactured in New York, 10 in Pennsylvania, 2 in New Jersey and 1 in Ohio.

The method of inspection of cement at the various mills is as follows: When there is to be enough cement to warrant doing so, an inspector is sent to the cement mill to sample cement and inspect shipments. The inspector takes samples from the various parts of the bin or from the conveyor as the cement is being carried to the bin, and each sample is tested in the same way as are the samples taken from cement delivered on the work. The endeavor is to obtain from the sampling and the testing of these samples the "run of the product." As soon as the samples are taken, the inspector places the bin of cement under the seal of this Department and the bin is so sealed that no cement can be added to or taken from it without detection. When the results of the tests have been secured, the reports are made in the usual way, and then, if the cement is accepted, the bin of cement is assigned to the contract which may have placed an order for the cement. When the contractor needs cement, the inspector at the mill breaks the seal on the bin, inspects the loading of the car or cars, seals these with the Department seal and then reseals the bin of cement. A notice of shipment is forwarded to the laboratory. This notice is examined and approved, if correct, and sent to the senior assistant engineer in charge of the contract to which the cement has been assigned. When the car or cars arrive on the work, the seal of the Department must be broken by the senior assistant engineer in charge or his representative, otherwise the lot of cement must be sampled and tested in the usual way.

SAND TESTS

The thorough examination and tests of the sands and gravels proposed for use on work in the various departments have been continued, and the importance of such tests has frequently been fully demonstrated. It has been found that almost all of the available sand and gravel banks along the line of the canal system have been sampled and tested, but with these it is now necessary to make occasional inspections and tests to ascertain whether or not the quality of the materials from these banks is equal to the samples accepted. Many other banks throughout the state, but not along the canal system, have also been tested. The results of the tests of these materials have also been found to be of value by other State departments.

The tests made are as follows: The sands are examined under the microscope for those elements that give the sand its characteristics. The other tests are for voids, loam, fineness or grading, organic matter and strength — both tensile and compressive — with cement. The latter are made from the sand in its natural condition and also washed; and the cement is a "standard" cement, made by mixing together in the laboratory several brands of cement which have given results nearly alike in the regular tests. All tests for strength cover at least 28 days, but many long-time tests are being carried. Considerable attention has been given to the methods used in making the tests and it is believed that they are the most accurate that can be employed.

The proposed new test for determining the effect of coatings on sand grains is being tested and given a thorough study. This test, if proven efficient, should give information in the testing of sands that will be of great value.

The testing of sand includes also the testing and examination of the gravel in the sand and also the testing of substitutes for sand and gravel, such as screenings, iron-ore tailings and slag.

CONCRETE TESTS

When in July, 1912, a hydraulic compression machine with a capacity of 200,000 pounds was placed in the laboratory, the

Division Engineers were notified that engineers in charge of work could take advantage of this machine and from time to time make cubes of concrete as it was being placed in the work. Six-inch cubes or cylinders of eight inches diameter and sixteen inches long can be tested in this machine. The plan generally followed is to mold the test piece from concrete mixed by the contractor for actual use in the work, keep it covered with a moist canvas for seven days, then allow it to be exposed under regular atmospheric conditions until the test-piece is twenty-one days old, when it is crated and sent to the laboratory for tests. The tests are made on these sample blocks when twenty-eight days old. The blocks are made in duplicate at least. In accordance with the newer practice, laboratory concrete specimens are being molded in cylinders, the length of which is twice the diameter. The cylinders generally give more uniform results than do the cubes.

OTHER TESTS

Besides those already reported, there have been made a large variety of other tests and analyses. Among the materials thus examined were stone, wooden and granite paving blocks, paving brick, bituminous materials, metal lath, hollow-tile, galvanized metal materials, waterproofings of various types, dynamo oils, wood preservatives, putty and paints. On these latter considerable work has been done. Another material submitted for testing has been linoleum and these tests have been both interesting and profitable. Considerable research work has been continued on laitance and on the efflorescence and incrustations on concrete, and microscopic examinations and analyses in the laboratory on these materials have been also continued. Additional apparatus has been installed to care for the above variety of work.

In addition to directing the work of the laboratory and mill inspection, the undersigned has made field inspection of the concrete and concrete materials being used on many of the Barge canal contracts where concrete was being placed. Particular attention has been given to the source of supply of the gravels, sand and stone being used in the concrete. A more definite knowledge is thus gained than is possible through a laboratory sample alone, but with both tests and field inspection absolute knowledge is gained. Inspection of its actual use is also a help in considering the points of merit or demerit in the material. Inspections of concrete that has been in place for some time have been made, to study the condition and the wear of the concrete for the purpose of securing information on the various theories that have been advanced from time to time on the changes that may take place in concrete. Some interesting and profitable studies have thus been made.

The development of the specifications and methods of tests of materials of construction is a natural sequence of the knowledge secured in the analyses, tests and inspections, so this has frequently been a valuable feature we have been called upon to do.

Respectfully submitted,

RUSSELL S. GREENMAN,
Senior Assistant Engineer in charge of Tests.

REPORT OF THE LAND BUREAU

State of New York

Department of the State Engineer and Surveyor

Land Bureau

Albany, N. Y., *July* 1, 1918.

Hon. Frank M. Williams, *State Engineer and Surveyor:*

Sir.— Herewith I submit a report of the work of the Land Bureau for the fiscal year ended June 30, 1918.

The sale of State land that is ordered sold by the Commissioners of the Land Office is conducted by this bureau. Twenty public auctions were held and the sum of $10,000.50 realized therefrom. A detailed statement of the sales is appended. The average sale for the previous ten years is $11,859.00. The above is exclusive of the sale of abandoned canal lands sold pursuant to chapter 299 of the Laws of 1916. The first sale of land under this act was held in the city of Schenectady on May 29, 1918, and 28 parcels were sold for $133,415.00. The part desired by the city of Schenectady through the business section was not handled by this Department.

Maps of all grants of land under water made by the Commissioners of the Land Office and the Legislature are on file in this bureau and new grants are added when made by the Land Board. These maps are complete to June 1, 1918.

The early records, maps and field notes filed in this bureau are being constantly examined by the public and are of great and increasing value.

Respectfully submitted,

MERRITT PECKHAM, Jr.

Land Clerk.

TABLE OF SALES CONDUCTED BY THE LAND BUREAU DURING THE FISCAL YEAR ENDED JUNE 30, 1918

Date of sale	PURCHASER	Location — county	Lot	Acres	Tax or mortgage	Price
1917						
July 24	August Nusser and wife	Richmond	1 village lot		Tax	$111 00
Aug. 14	Charles W. Pratt	Oneida		68	Mortgage	1,050 00
Aug. 22	John Scally	Nassau		5	Escheat	201 00
Oct. 10	F. H. Flaherty and two	Onondaga	1 city lot			471 00
Oct. 16	Herman D. Merriam	Oswego	1 village lot		Canal	154 50
Nov. 7	Middle Lehigh Co.	Kings	1 city lot		Tax	345 00
Nov. 8	Isabella Pearce	Kings	1 city lot		Tax	201 00
Dec. 18	Morris Mandel	Rockland	4 village lots		Tax	179 00
1918						
Jan. 8	John and Teresa Grumino	Richmond	2 village lots		Tax	290 00
Jan. 16	Celia Pfeifer	Kings	18 city lots		Tax	2,651 00
Jan. 17	Richard Johnston	Richmond	1 village lot		Tax	26 00
Jan. 23	Myron J. Dennison Co.	Chenango		195	Tax and mortgage	900 00
Jan. 30	John W. Daly	Kings	1 village lot		Tax	31 00
Feb. 12	Sarah J. Bailey	Suffolk	1 village lot		Escheat	179 00
Feb. 20	N. Y. Consolidated R. R. Co.	Kings	1 city lot		Tax	764 00
Feb. 28	Wooster and Prentiss	Herkimer		84	Mortgage	1,400 00
Mar. 5	William Ball	Ontario		77½	Mortgage	436 00
Mar. 27	Benjamin Traktman	Kings	2 city lots		Escheat	190 00
April 25	M. Prouse Neal	Oswego	2 city lots			421 00
	Total					$10,000 50

BOUNDARY LINE REPORT

Relocation of Monuments on the Schoharie-Greene, Greene-Delaware and Delaware-Schoharie County Lines near Schoharie Creek

Report on Relocation of Monuments on the Schoharie-Greene, Greene-Delaware and Delaware-Schoharie County Boundary Lines Near Schoharie Creek

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STATE OF NEW YORK

DEPARTMENT OF STATE ENGINEER AND SURVEYOR

EASTERN DIVISION

ALBANY, *December* 27, 1918.

Hon. FRANK M. WILLIAMS, *State Engineer and Surveyor, Albany, N. Y.:*

Dear Sir.— In 1914 a survey was made under chapter 760, Laws of 1913, of a portion of the boundary line between the counties of Greene and Schoharie by this Department.

The extreme westerly point of this boundary line is in Schoharie creek, about 1⅛ miles north of Devasego Falls, and there meet the boundary line between the counties of Greene and Delaware and that between the counties of Schoharie and Delaware. To safely monument this point, three monuments were placed, and were noted in the report of the survey (Report of State Engineer and Surveyor for 1914, Vol. I) as monuments A, B and I.

The Board of Water Supply, City of New York, has since acquired the land on which these monuments were placed, and is now in the process of constructing a reservoir which will cover these monuments to a considerable depth. The Board of Water Supply offered and agreed to relocate these three monuments and to place them at points above the proposed flow line of the reservoir. This offer was accepted by this Department and an inspection was made of the proposed new locations. These locations being satisfactory to this Department, the Board of Water Supply relocated said monuments A, B and I as agreed and as reported by them, and recorded on the accompanying map.

Monument A is now located 455.65 feet westerly from its former location and on a prolongation of the line between monuments A and B as originally established. It is on the "Taking line" and on the west side of a proposed new highway.

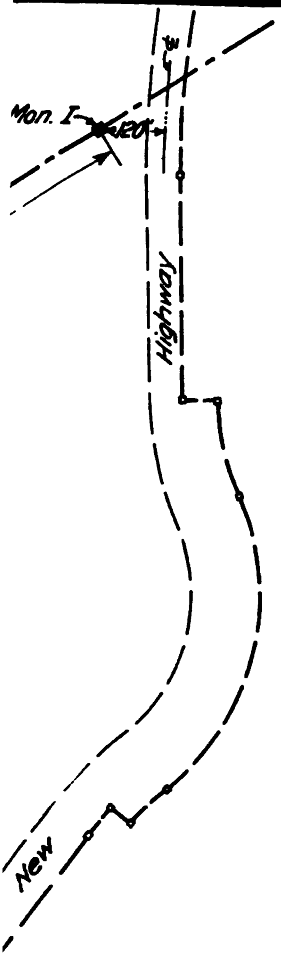
Monument B is now located 1,962.00 feet easterly from its former location and on a prolongation of the line between monuments A and B as originally established. It is on the "Taking line" and on the east side of a proposed new highway.

Monument I is now located 2,765.11 feet northeasterly from its former location and on the line between the counties of Greene and Schoharie. It is west 120 feet from the center line of the proposed new highway.

To aid in locating in the field the line between the counties of Greene and Schoharie, the Board of Water Supply located in addition a point on a prolongation of this county line into Delaware county and marked it by placing a bronze plug in ledge rock. This is also shown on the accompanying map.

Respectfully submitted,

RUSSELL S. GREENMAN,
Senior Assistant Engineer.



ENE-SCHOHARIE COUNTY
BOUNDARY LINE

NEW LOCATION OF THREE MONUMENTS

denda to map in 1914 report

UNIV. OF MICH.

BOARD OF WATER SUPPLY
CITY OF NEW YORK
ENGINEERING BUREAU

GRAND GORGE, N. Y., *December* 23, 1918.

HON. FRANK M. WILLIAMS, *State Engineer and Surveyor, Albany, N. Y.:*

Dear Sir.— In accordance with an understanding reached with Senior Assistant Engineer Russel S. Greenman, the Greene–Delaware–Schoharie county line monuments have been relocated as shown on Acc. R-S-P-81, two blue-prints of which are forwarded herewith.

In addition to relocating the monuments, we have made a prolongation of the Schoharie–Greene county line and set a bronze plug in ledge rock, in order that from the new location of monument there should be a sight by which the county line could be produced in a northeasterly direction, the points being intervisible.

Trusting that this information will be satisfactory to you, I am,

Very truly yours,

GEO. G. HONNESS,
Department Engineer.

INDEX OF ILLUSTRATIONS

FACING PAGE
Fleet of boats in Barge canal 10
State Engineer removing last Barge canal barrier 12
Shipyard for construction of Government concrete canal-boats 14
Government concrete boat in canalized Hudson 16
Main drive bridge, Genesee Valley park, Rochester 18
Pier 5, East river, N. Y. city, terminal 22
Troy (lower) terminal, view from land 24
Schenectady terminal, track installation 26
Portable package-freight conveyor at canal terminal 28
Temporary dam in Genesee river 30
Steam trawler passing through canal 32
Eastern canal terminus and Waterford terminal 70
Government concrete boat in Barge canal 72
Government boats traversing canal for use in N. Y. harbor 74
Albany terminal 78
Troy (lower) terminal, view from water 80
Freeman's bridge over canalized Mohawk 92
Schenectady terminal, general view 94
Amsterdam terminal 96
Northumberland bridge over canalized Hudson 122
Pier 6, East river, N. Y. city, terminal 128
Greenpoint, N. Y. city, terminal, mooring pier site 130
Greenpoint, N. Y. city, terminal, new pier 132
Minetto bridge, eastern portion 152
Rome terminal 162
N. Y. C. R. R. bridge, Brewerton 164
Mays Point movable dam 166
Mays Point lock, No. 25 168
Syracuse terminal, south pier and dockwall 170
Syracuse terminal warehouse 172
Weedsport terminal 174
Minetto bridge, western end 176
Minetto bridge, balustrade, western end 178
Oswego (river) terminal 180
Oswego (lake) terminal 182
"Free" bridge over canalized Seneca river 184
Removal of dike barrier, east bank, Genesee river 202
West bank, Genesee river, at Barge canal crossing 204
Wall, west side, Rochester harbor 206
N. Y. C. R. R. bridge (main line), Lyons 210
Lyons lock, No. 27 212

FACING PAGE
Lyons terminal 216
Irondequoit concrete trough, construction view 218
Irondequoit concrete trough, completed view 220
Guard-lock east of Genesee crossing 222
Prism excavation, deep cut southeast of Rochester 224
Prism excavation near Pennsylvania R. R., spur line, bridge 226
Prism excavation in Genesee Valley park, Rochester 230
Channel excavation, Genesee river, Rochester 232
Buffalo (Erie basin) terminal 244
Map, monument relocation, Schoharie–Greene, Greene–Delaware, Delaware–Schoharie county lines 272

INDEX

Annual Report of the State Engineer and Surveyor of New York, 1918

A — PAGES

- Abandoned canal lands ... 31–2, 155
- Albany, Barge canal terminal (Contract No. 101) ... 22, 67, 76, 78–9
- Albany, Barge canal terminal (Contract No. 201) ... 22, 63, 76, 78
- Albany, Schuyler mansion, survey ... 39, 74
- Albany, State office building, survey ... 39, 74
- Albion, Barge canal terminal (Contract No. 39) ... 24, 56, 234, 235
- Albion, Barge canal terminal (Contract No. 211) ... 24, 56, 234, 235–6
- Amsterdam, Barge canal terminal (Contract No. 12-F) ... 23, 61, 80, 82, 98
- Amsterdam, Barge canal terminal (Contract No. 106) ... 23, 63, 80, 96
- Amsterdam, Barge canal terminal (Contract No. 204) ... 23, 56, 80, 94–5
- Amsterdam, Barge canal terminal (Contract No. 214) ... 23, 63, 80, 82, 97
- Appropriations:
  - Blue line surveys ... 34
  - Boundary lines ... 35–6, 37, 38
  - Canal maintenance ... 18–9
  - Court of Claims surveys ... 38
  - Land grants ... 39
  - Special ... 34–5, 72–4, 154–5, 207–9
  - State departments and commissions, work for ... 39
  - Stream gaging ... 38
- Armory site, Malone, survey ... 39, 74
- Armory site, Troy, survey ... 39, 74, 76
- Assessment and Equalization, State Board of ... 7
- Attorney-General, surveys for .. 38, 51, 74, 126, 156, 195, 196, 197, 210, 255, 257
- Auburn, Barge canal extension to, survey ... 34, 51, 196, 197

B

- Baldwinsville, Barge canal terminal ... 24
- Barge canal:
  - Auburn, extension to, survey ... 34, 51, 196, 197
  - Boats, Federal Government fleet ... 13, 15
  - Boats, own, operated by business corporations ... 17
  - Booms for catching debris recommended ... 115
  - Bridge west of lock No. 18 recommended ... 115–6
  - Cancelation and completion of contracts under war conditions ... 29–31
  - Castle creek entrance, spillway recommended ... 115

Barge canal — (*Continued*): PAGES
  Castle creek, foot-bridge across recommended............... 115
  Cement testing 261-4
  Ceremony of completing...........................11-2, 201-3
  Channel sweeping 70, 81
  Construction work, summary by years and canals............. 64-5
  Contracts completed during the fiscal year................... 53-4
  Contracts pending June 30, 1918........................... 58-9
  Contracts. (*See* "Contracts, Barge canal.")
  Dam No. 5, Rotterdam, stopping leakage.................... 81, 85-8
  Development of new traffic................................ 16
  Difficulties of completing for 1918 season.................. 8-11
  Dike near Indian Castle guard-gate recommended.............. 116
  Division engineers' reports:
    Eastern division.. 69-71
    Middle division 151-2
    Western division 201-7, 210-1
  Eastern division engineer's report........................ 69-71
  Engineering expenses. (*See* "Engineering expenses.")
  Expedients used in completing............................. 9-11
  Extension to Auburn, survey......................34, 51, 196, 197
  Federal control 12-5
  Federal Government fleet................................. 13, 15
  Fonda and Indian Castle, removal of bars between........... 99-100
  Grain traffic 17, 29
  Industrial sites, recommendation......................... 32
  Lands, monumenting and mapping.......................... 210
  Link in waterway chain................................... 17
  Maintenance 18-9, 98-100
  Middle division engineer's report......................... 151-2
  Mindenville to St. Johnsville, highway recommended........... 114
  Monumenting and mapping canal lands....................... 210
  Mooring places, investigation for, recommendation...........70-1, 83-4
  Navigation 8, 15
  Outlets, Federal connections at........................... 19-20
  Planting trees along, recommendation...................... 32-3
  Railroad crossings:
    Brewerton, at 18
    Cayuga, at 18, 185
    Geneva, near 18, 185
    Lyons, east of............................18, 206, 218, 229
    Newark, east of....................................... 218
    Pittsford, near 206, 229
    Rochester, near 18, 206, 229, 234
    Schenectady, at 18
    Seneca Falls, near 18, 185
    Tonawanda, at 18, 206-7
  Recommendations..............................18-21, 32-3, 114-6
  Report of State Engineer.................................. 8-21

Barge canal — (*Concluded*): PAGES

- Residencies, report:
  - Cayuga and Seneca canal 180–5
  - Champlain, No. 1 116–20
  - Champlain, No. 2 121–3
  - Champlain, No. 3 123–4
  - Erie, No. 1 76–8
  - Erie, Mohawk river residency 80–94, 98–100
  - Erie, No. 4 100–10
  - Erie, No. 5 .... 157–62, 166
  - Erie, Nos. 6 and 7 166–72
  - Erie, No. 8 .... 211–6, 218
  - Erie, No. 9 .... 218–33, 234
  - Erie, No. 10-B 236–7
  - Erie, No. 11 239–43
  - Oswego canal 175–7
- Retention of right of way recommended 70, 100–1
- Rocky Rift dam, flash-board operation recommended 115
- Scotia, removal of bars at 98–9
- Special work connected with 55, 60, 89–90, 98–100, 166, 211–2
- Stake lights, vicinity of Mindenville bridge, recommended 115
- St. Johnsville to Mindenville, highway recommended 114
- Strategic location 17
- Structures standing test of use 15
- Sweep-boats recommended 70
- Terminals crowded by traffic 16
- Terminals. (*See* "Barge canal terminals.")
- Termini, Federal connections 19–20
- Tillable lands in Erie residency No. 4 116
- Traffic in war munitions 16
- Transportation 15–7
- Use for traffic 15–7, 71
- Waters, surplus 20–1
- Western division engineer's report 201–7, 210–1
- Work preparatory to 1918 opening 11
- Work remaining after 1918 opening 12

Barge canal terminals:

- Albany (Contract No. 101) 22, 62, 76, 78–9
- Albany (Contract No. 201) 22, 63, 76, 78
- Albion (Contract No. 39) 24, 56, 234, 235
- Albion (Contract No. 211) 24, 56, 234, 235–6
- Amsterdam (Contract No. 12-F) 23, 61, 80, 82, 98
- Amsterdam (Contract No. 106) 23, 63, 80, 96, 239
- Amsterdam (Contract No. 204) 23, 56, 80, 94–5
- Amsterdam (Contract No. 214) 23, 63, 80, 82, 97
- Baldwinsville 24
- Brewerton 24
- Buffalo, Erie basin (Contract No. 21) 25, 61, 239, 244–5
- Buffalo, Erie basin (Contract No. 21-P) 25, 61, 239, 245

Barge canal terminals — (*Continued*): PAGES

- Buffalo, Erie basin (Contract No. 61) 25, 62, 239, 245
- Buffalo, Erie basin (Contract No. 62) 25, 62, 239, 246
- Buffalo, Erie basin (Contract No. 66) 25, 62, 239, 246
- Buffalo, Erie basin (Contract No. 106) 25, 63, 239, 247
- Buffalo (Ohio basin) (Contract No. 53) 25, 62, 239, 246-7
- Canajoharie (Contract No. 37) 23, 61, 102, 111
- **Cancelation and completion of contracts under war conditions** .. 29-31
- Cleveland (Contract No. 28) 24, 61, 167, 172
- Cohoes (Contract No. 36) 22, 76, 79-80
- Completion of, recommendation 28
- Constantia (Contract No. 29) 61, 167, 172
- Construction work, summary by years and canals 64-5
- Contracts completed during the fiscal year 56
- Contracts pending June 30, 1918 61-3
- **Contracts. (*See* "Contracts, Barge canal terminals.")**
- Crescent 23
- Crowded by traffic 16, 71
- Division engineers' reports:
  - Eastern division 71
  - Western division 210-1
- Eastern division engineer's report 71
- Engineering expenses. (*See* "Engineering expenses.")
- Fairport 24
- Fonda (Contract No. 10-P) 23, 61, 80, 98
- Fonda (Contract No. 204) 23, 56, 80, 94-5
- Fort Edward 22
- Fort Plain (Contract No. 208) 23, 56, 100, 102, 113
- Frankfort (Contract No. 27-P) 24, 61, 102, 112-3
- Frankfort (Contract No. 204) 24, 56, 102, 113-4
- Fulton 25
- Grain elevators, recommendation 29
- Herkimer 23
- Holley 24
- Hudson river cities, preliminary surveys 28, 35
- Ilion (Contract No. 204) 23, 56, 102, 113-4
- Ithaca 25
- Kingston, preliminary survey 28, 35
- Little Falls (Contract No. 101) 23, 62, 102, 112
- Little Falls (Contract No. 208) 23, 56, 100, 102, 113
- Lockport, lower terminal (Contract No. 101) 25, 62, 236, 238
- Lockport, lower terminal (Contract No. 106) 25, 63, 211, 236, 238
- Lockport, upper and lower terminals (Contract No. 210) ... 25, 56, 237-8
- Lyons (Contract No. 31) 24, 61, 211, 216-7
- Lyons (Contract No. 106) 24, 63, 211, 217
- Machinery equipment 25-6, 71
- Mechanicville 22
- Medina (Contract No. 211) 25, 56, 234, 235-6
- Middleport (Contract No. 54) 25, 56, 234, 236
- Newark (Contract No. 211) 24, 56, 211, 217-8

Barge canal terminals — (*Continued*): PAGES
Newburgh, preliminary survey 28, 35
New York city, Flushing 27, 125
New York city, Gowanus bay (Contract No. 55) 21–2, 26, 62, 126–7
New York city, Greenpoint (Contract No. 19) 22, 61, 130–1
New York city, Greenpoint (Contract No. 223) 125
New York city, Hallets Cove 27
New York city, Long Island City, Rogers street (Contract No. 106) 22, 27, 63, 129–30
New York city, Long Island City, Rogers street (Contract No. 217) 125
New York city, Mott Haven, E. 138th street (Contract No. 44). 22, 27, 62, 132
New York city, Pier 5, East river (Contract No. 56) 22, 62, 125, 127
New York city, Pier 5, East river (Contract No. 103-A) 22, 62, 127
New York city, Pier 6, East river (Contract No. 52) 22, 62, 127–8
New York city, Pier 6, East river (Contract No. 105) 22, 63, 129
New York city, Pier 6, East river (Contract No. 106) 22, 63, 129–30
New York city, Pier 6, East river (Contract No. 207) ... 22, 63, 125, 128
New York city, Pier 6, East river (Contract No. 207-H) .. 22, 63, 125, 129
New York city, Pier 6, East river (Contract No. 207-P) .. 22, 63, 125, 129
North Tonawanda (Contract No. 101) 25, 62, 239, 243–4
North Tonawanda (Contract No. 209) 25, 56, 239, 243
Oswego, lake terminal (Contract No. 33) 25, 56, 175, 178–9
Oswego, lake terminal (Contract No. 33-P) 25, 61, 175, 179
Oswego, lake terminal (Contract No. 59) 25, 62, 175, 179
Oswego, lake terminal (Contract No. 60) 25, 62, 175, 180
Oswego, lake terminal (Contract No. 106) 25, 63, 175, 180
Oswego, river terminal (Contract No. 30) 25, 61, 175, 177–8
Palmyra 24
Pittsford 24
Plattsburg 23
Port Henry 23
Poughkeepsie, preliminary survey 28, 35
Recommendations 28–9
Report of State Engineer 21–9
Residencies, reports:
Champlain, No. 1 120–1
Champlain, No. 3 124–5
Erie, No. 1 78–80
Erie, Mohawk river residency 94–8
Erie, No. 4 111–6
Erie, No. 5 162–6
Erie, Nos. 6 and 7 172–5
Erie, No. 8 216–8
Erie, No. 9 233–4
Erie, No. 10-A 234–6
Erie, No. 10-B 237–8
Erie, No. 11 243–7
New York residency 125–32
Oswego canal 177–80

Barge canal terminals — (*Concluded*):
Rochester (Contract No. 48) ... 24, 62, 229, 233–4
Rochester (Contract No. 57) ... 229
Rome (Contract No. 16-P) ... 24, 56, 157, 165
Rome (Contract No. 101) ... 24, 62, 157, 165–6
Rome (Contract No. 205) ... 24, 56, 157, 162–3
Rouses Point (Contract No. 26) ... 23, 61, 125
Schenectady (Contract No. 8-P) ... 23, 61, 80, 95
Schenectady (Contract No. 64) ... 23, 62, 80, 95–6
Schenectady (Contract No. 103-A) ... 23, 62, 80, 96
Schenectady (Contract No. 106) ... 23, 63, 80, 96
Schenectady (Contract No. 204) ... 23, 56, 80, 94–5
Schuylerville (Contract No. 13) ... 22, 56, 120–1
Seneca Falls ... 25
Spencerport ... 24
Status of work ... 21–5, 26–7
St. Johnsville (Contract No. 40) ... 23, 56, 102, 111–2
Syracuse (Contract No. 20) ... 24, 61, 167, 173–4
Syracuse (Contract No. 106) ... 24, 63, 167, 174–5, 239
Syracuse (Contract No. 213) ... 24, 63, 167, 174
Thomson ... 22
Tonawanda (Contract No. 106) ... 25, 63, 239, 247
Tonawanda (Contract No. 209) ... 25, 56, 243
Troy, lower terminal (Contract No. 106) ... 22, 63, 76, 79
Troy, upper terminal (Contract No. 41) ... 22, 76
Utica (Contract No. 15-D) ... 24, 56, 157, 163–4
Utica (Contract No. 15-M) ... 24, 61, 157, 164
Utica (Contract No. 63) ... 24, 62, 157, 164
Utica (Contract No. 106) ... 24, 63, 157, 165
Utica (Contract No. 205) ... 24, 56, 157, 162–3
Waterford ... 23
Weedsport ... 24
West 53d street, North river (Contract No. 38) . 22, 26–7, 61, 125, 131–2
Western division engineer's report ... 210–1
Whitehall (Contract No. 101) ... 22, 62, 124–5
Whitehall (Contract No. 201) ... 22, 63, 124
Work of the year ... 21
Yonkers, preliminary survey ... 28, 35

Bars, removal, at Scotia ... 98–9
Bars, removal, between Fonda and Indian Castle ... 99–100
Batavia, Tonawanda creek survey ... 34, 51, 256, 257
Belt line connection, railroads entering N. Y. city, survey ... 39
Black and Moose rivers, Lyons Falls, bridge ... 50, 52, 154, 192, 197
Black River canal, engineering expenses, ordinary repairs ... 49, 186, 197
Black River canal, restoring ... 156
Blue line surveys ... 33–4, 51, 72, 101–2, 144–5, 148, 156–7, 194, 195, 197, 209, 255, 257
Board of canvassers, State ... 7
Board of Equalization and Assessment, State ... 7

PAGES

- Boards and commissions, State Engineer's duties 7
- Boats, Barge canal, business corporations operating own 17
- Boats, Barge canal, Federal Government fleet 13, 15
- Booms for catching debris recommended 115
- Boundary lines:
  - County:
    - Delaware–Schoharie 36, 51, 73, 146, 148
    - Saratoga–Warren 36–7, 51, 73, 147, 148
    - Schoharie-Greene, Greene-Delaware, Delaware-Schoharie monument relocation 38, 271–3
    - Ulster–Greene 37–8
  - Engineering expenses 51, 146–7, 148
  - Recommendations 35–6, 37, 38
  - Reports 36–8
  - State:
    - Canada 51, 73, 146, 148
    - Pennsylvania 51, 73, 146, 148
- Brewerton, Barge canal terminal 24
- Brewerton, railroad crossing 18
- Bridge Commission, Interstate 7
- Bridge designers, engineers etc., engineering expenses 50, 143, 148
- Bridges:
  - Between Crescent and Rexford, location of 34, 51, 145, 148
  - Buffalo, Hertel avenue 34, 50, 57, 209, 254, 257
  - Castle creek, foot-bridge across, recommended 115
  - Geneva, Lake street, Cayuga and Seneca canal 34, 155
  - Lock No. 18, Barge canal, west of, recommended 115–6
  - Lyons Falls, over Black and Moose rivers 50, 52, 154, 192, 197
  - Minetto, over Oswego river 50, 57, 193, 197
  - Railroad. (*See* "Railroad crossings.")
  - Rome, Whitesboro street 34, 50, 57, 192, 197
  - Schenectady–Scotia 34, 51, 146, 148
  - Yorkville 35, 50, 155, 192, 197
- Buffalo and Tonawanda, Commission to investigate canal between 7
- Buffalo, Barge canal terminals:
  - Erie basin (contract No. 21) 25, 61, 239, 244–5
  - Erie basin (contract No. 21-P) 25, 61, 239, 245
  - Erie basin (contract No. 61) 25, 62, 239, 245
  - Erie basin (contract No. 62) 25, 62, 239, 246
  - Erie basin (contract No. 66) 25, 62, 246
  - Erie basin (contract No. 106) 25, 63, 239, 247
  - Ohio basin (contract No. 53) 25, 62, 239, 246–7
- Buffalo, canal route between Tonawanda and, study of 34, 51, 256, 257
- Buffalo, Hertel avenue bridge 34, 50, 57, 209, 254, 257
- Buffalo, surveys for grants of lands under water 210
- Bulkhead at Rockaway Point 52, 72, 125, 133
- Bureau, land 44, 267–8

C

PAGES

- Canadian-New York boundary line........................51, 73, 146, 148
- Canajoharie, Barge canal terminal (contract No. 37)....23, 61, 102, 111
- Canal:
  - Blue line survey..33-4, 51, 72, 101-2, 144-5, 148, 156-7, 194, 195, 197, 209, 255, 257
  - Lands, abandoned 31-2, 155
  - Lands, mapping. (*See* "Blue line survey.")
  - Lands, tree planting on, recommendation..................... 32-3
  - Maintenance 18-9, 98-100
  - Navigation 6, 15
  - Terminals. (*See* "Barge canal terminals.")
  - Termini, Federal connections................................ 19-20
  - Traffic:
    - Development of new.................................. 16
    - Grain 17, 29
    - Use of canals....................................15-7, 71
    - War munitions 16
- Canal, Barge. (*See* "Barge canal.")
- Canal between Tonawanda and Buffalo, Commission to investigate.. 7
- Canal Board 7, 30, 32, 45
- Canal channel sweeping.. 70, 81
- Canal route between Tonawanda and Buffalo, study of......34, 51, 256, 257
- Canandaigua harbor, pier and breakwater...........34, 50, 57, 155, 194, 197
- Cancelation and completion of contracts under war conditions..... 29-31
- Canisteo river improvement..............................50, 253, 257
- Canvassers, State Board of.. 7
- Castle creek entrance, spillway recommended........................ 115
- Castle creek, foot-bridge across recommended........................ 115
- Cayuga and Seneca canal:
  - Engineering expenses, Barge canal construction............49, 190, 197
  - Geneva, Lake street bridge.................................. 34, 155
  - Railroad crossings 18, 185
  - Summary of construction work by years....................... 64-5
  - (*See also* "Barge canal" *and* "Contracts.")
- Cayuga, railroad crossing.. 18, 185
- Cement tests, report.. 261-4
- Ceremony attending Barge canal completion.....................11-2, 201-3
- Chadakoin river, improvement.......................50, 57, 208-9, 254, 257
- Champlain canal:
  - Blue line surveys...........................33-4, 51, 72, 144-5, 148
  - Engineering expenses:
    - Barge canal construction...........................49, 139-40, 148
    - Ordinary repairs 49, 134, 148
  - Summary of construction work by years....................... 64-5
  - Terminus at Whitehall.. 19
  - (*See also* "Barge canal" *and* "Contracts.")
- Champlain, Lake, canal outlet.. 19
- Channel sweeping 70, 81

PAGES

Chittenango creek dam, rebuilding recommended ... 152
Claims, Court of. (*See* "Court of Claims.")
Cleveland, Barge canal terminal (contract No. 28) ... 24, 61, 167, 172
Cohoes, Barge canal terminal (contract No. 36) ... 22, 76, 79–80
Cohoes, High street bridge ... 50, 73, 76, 144, 148
Commission, Bridge, Interstate ... 7
Commission, Hospital Development ... 7
Commissions and Boards, State Engineer's duties ... 7
Commissions and departments, engineering work for ... 7, 39, 74
Commission to Investigate Canal between Tonawanda and Buffalo ... 7
Committee to Investigate the Water-Powers of the State ... 7
Completion and cancelation of contracts under war conditions ... 29–31
Completion of Barge canal:
  Ceremony attending ... 11–2, 201–3
  Difficulties ... 8–11
  Expedients used ... 9–11
Concrete tests, report ... 264–5
Conservation Commission, river regulating section ... 7
Constantia, Barge canal terminal (contract No. 29) ... 61, 167, 172
Construction work, summary by years, canals and divisions ... 64–5
Contracts:
  Barge canal:
    Completed during the fiscal year ... 53–4
    Contract A-1 ... 54, 180, 182
    Contract C ... 180, 183
    Contract F ... 54, 180–1
    Contract L ... 54, 180, 184–5
    Contract M ... 59, 180, 182–3
    Contract P ... 54, 180, 183–4
    Contract R ... 59, 180, 181
    Highways at Rome ... 55, 157, 166
    No. 1-A ... 58, 121, 122–3
    No. 2-G ... 53, 76, 77
    No. 15 ... 123
    No. 18-A ... 100, 102–3
    No. 19-A ... 58, 239–40
    No. 20-B ... 84
    No. 20-C ... 84
    No. 20-D ... 80, 83, 84–9
    No. 20-D (special) ... 55, 80, 83, 89–90
    No. 21 (special) ... 55
    No. 21-A ... 58, 218, 226–7
    No. 23-A ... 58, 204, 218, 223–4
    No. 25 ... 123
    No. 29-A ... 58, 102, 108–10
    No. 30 ... 100
    No. 30 A ... 53, 100, 102, 106
    No. 42-A ... 58, 157–8

Contracts — (*Continued*) :
  Barge canal — (*Continued*) : PAGES
    No. 43 .... 53, 157, 158–9
    No. 44-A 58, 157, 161
    No. 46-A 53, 167, 169–70
    No. 46-B 58, 167, 170–1
    No. 47-A (special) 60, 204, 211–2
    No. 51 .... 53, 157, 162
    No. 59 .... 58, 229, 231–2
    No. 59-A 53, 229, 232
    No. 63-A 60, 204, 218–22
    No. 70-A 53, 76, 117
    No. 72-B 53, 117, 118
    No. 73-A 58, 117, 118–20
    No. 74 .... 53, 76
    No. 81 .... 53, 157, 159–60
    No. 83 .... 58, 205, 239, 240–1
    No. 84 .... 58, 211, 212–3
    No. 91 .... 58, 77
    No. 91-A 53, 76, 77–8
    No. 98 .... 58, 236–7
    No. 99 .... 50, 57, 58, 175, 176–7, 193, 197
    No. 117 .... 58, 175, 176
    No. 118 .... 80, 83, 93
    No. 122 100
    No. 122-A 58, 102, 104–5
    No. 128 .... 53, 121
    No. 129 .... 53, 80, 92–3
    No. 131-A 59, 117, 120
    No. 132 .... 53, 166, 167
    No. 133 .... 53, 102, 107–8
    No. 135 .... 53, 80, 93–4
    No. 137 .... 53, 102, 103–4
    No. 138 .... 59, 229, 233
    No. 139 .... 53, 175, 177
    No. 141 .... 59, 211, 215–6
    No. 144 .... 59, 229, 233
    No. 146 .... 59, 102, 106–7
    No. 147 .... 59, 239, 241–2
    No. 148 .... 59, 211, 213
    No. 150 .... 53, 80, 90
    No. 153 .... 54, 100, 102, 107, 167, 168, 175
    No. 154 .... 54, 211, 213
    No. 155 .... 54, 80, 90–2
    No. 156 .... 59, 157, 161
    No. 157 .... 54, 157, 160
    No. 158 100
    No. 159 .... 59, 211, 215
    No. 161 .... 59, 218, 225–6
    No. 162 .... 54, 218, 228

Contracts — (*Continued*) :
Barge canal — (*Concluded*) : PAGES
No. 164 ....59, 211, 213–4
No. 165 ....59, 167, 171–2
No. 167 .... 59, 175
No. 169 ....54, 117, 118, 121, 122
No. 170 ....59, 219, 227–8
No. 172 ....59, 167, 168–9, 211, 216, 218, 229, 239, 242
No. 173 ....54, 167, 169, 211, 216, 239, 242–3
No. 178 ....54, 218, 224–5
No. 179 ....59, 218, 222
No. 180 ....59, 80, 82, 92
No. 181 .... 59, 105
No. 184 ....59, 167–8
No. 185 ....59, 80, 82, 93
Pending June 30, 1918............................... 58–9
Summary of construction work by years and canals...... 64–5
Barge canal terminals:
Completed during the fiscal year....................... 56
No. 8-P (Schenectady) 23, 61, 80, 95
No. 10-P (Fonda) 23, 61, 80, 98
No. 12-F (Amsterdam) 23, 61, 80, 82, 98
No. 13 (Schuylerville) 22, 56, 120–1
No. 15-D (Utica) 24, 56, 157, 163–4
No. 15-M (Utica) 24, 61, 157, 164
No. 16-P (Rome) 24, 56, 157, 165
No. 19 (New York city, Greenpoint)...............22, 61, 130–1
No. 20 (Syracuse)..........................24, 61, 167, 173–4
No. 21 (Buffalo, Erie basin)...................25, 61, 239, 244–5
No. 21-P (Buffalo, Erie basin).........................25, 61, 245
No. 26 (Rouses Point)..............................23, 61, 125
No. 27-P (Frankfort)..........................24, 61, 102, 112–3
No. 28 (Cleveland)..........................24, 61, 167, 172
No. 29 (Constantia)..............................61, 167, 172
No. 30 (Oswego, river terminal)...............25, 61, 175, 177–8
No. 31 (Lyons)..............................24, 61, 211, 216–7
No. 33 (Oswego, lake terminal)...............25, 56, 175, 178–9
No. 33-P (Oswego, lake terminal)...............25, 61, 175, 179
No. 36 (Cohoes)..............................22, 76, 79–80
No. 37 (Canajoharie)..........................23, 61, 102, 111
No. 38 (W. 53d St., N. R.).............22, 26–7, 61, 125, 131–2
No. 39 (Albion)..............................24, 56, 234, 235
No. 40 (St. Johnsville)........................23, 56, 102, 111–2
No. 41 (Troy, upper terminal)....................... 22, 76
No. 44 (Mott Haven)..............................22, 62, 132
No. 48 (Rochester)..........................24, 62, 229, 233–4
No. 52 (New York city, Pier 6, East river)..........22, 62, 127–8
No. 53 (Buffalo, Ohio basin)....................25, 62, 246–7
No. 54 (Middleport)..........................25, 56, 234, 236
No. 55 (New York city, Gowanus bay).......21–2, 26, 62, 126–7

Contracts — (*Continued*):
  Barge canal terminals — (*Continued*): PAGES
    No. 56 (New York city, Pier 5, East river)........22, 62, 125, 127
    No. 57 (Rochester).................................. 229
    No. 59 (Oswego, lake terminal)..................25, 62, 175, 179
    No. 60 (Oswego, lake terminal)..................25, 62, 175, 180
    No. 61 (Buffalo, Erie basin)........................25, 62, 245
    No. 62 (Buffalo, Erie basin)...................25, 62, 239, 246
    No. 63 (Utica)...24, 62, 157, 164
    No. 64 (Schenectady)..........................23, 62, 80, 95–6
    No. 66 (Buffalo, Erie basin)........................25, 62, 246
    No. 101 (Albany, Whitehall, Little Falls, Rome, Lockport (lower terminal) and North Tonawanda)....22, 23, 24, 25, 62, 76, 78–9, 102, 112, 124–5, 157, 165–6, 236, 238, 239, 243–4
    No. 103-A (Schenectady and New York city, Pier 5)....22, 23, 62, 80, 96, 127
    No. 105 (New York city, Pier 6, East river)............22, 63, 129
    No. 106 [Buffalo (Erie basin) Tonawanda, Lockport (lower terminal), Lyons, Syracuse, Oswego (lake terminal), Utica, Amsterdam, Schenectady, Troy (lower terminal), New York city, Pier 6, and Long Island City] 22, 23, 24, 25, 63, 76, 79, 80, 96, 129–30, 157, 165, 167, 174–5, 180, 211, 217, 236, 238, 239, 247
    No. 201 (Albany and Whitehall)..............22, 63, 76, 78, 124
    No. 204 (Amsterdam, Fonda, Frankfort, Ilion and Schenectady) 23, 24, 56, 80, 94–5, 102, 113–4
    No. 205 (Rome and Utica)....................24, 56, 157, 162–3
    No. 207 (New York city, Pier 6, East river)......22, 63, 125, 128
    No. 207-H (New York city, Pier 6, East river)..22, 63, 125, 129
    No. 207-P (New York city, Pier 6, East river)....22, 63, 125, 129
    No. 208 (Fort Plain and Little Falls)........23, 56, 100, 102, 113
    No. 209 (North Tonawanda and Tonawanda)......25, 56, 239, 243
    No. 210 (Lockport, upper and lower terminals)..25, 56, 236, 237–8
    No. 211 (Albion, Medina and Newark)....24, 25, 56, 211, 217–8, 234, 235–6
    No. 213 (Syracuse)..........................24, 63, 167, 174
    No. 214 (Amsterdam)........................23, 63, 80, 82, 97
    Pending June 30, 1918.................................. 61–3
    Summary of construction work by years and canals........ 64–5
  Black River canal restoring................................ 155
  Buffalo, Hertel avenue bridge..............34, 50, 57, 209, 254, 257
  Canandaigua harbor, pier and breakwater....34, 50, 57, 155, 194, 197
  Cancelation and completion under war conditions.............. 29–31
  Canisteo river improvement..............................50, 253, 257
  Chadakoin river improvement..................50, 57, 208–9, 254, 257
  Cohoes, High street bridge..........................50, 73, 76, 144, 148
  Completed during the fiscal year.............................. 52–6
  Cowaselon creek, dredging..................34, 50, 57, 154–5, 193, 197
  Ellicott creek improvement..................34, 50, 57, 207, 254, 257

- Contracts — (*Concluded*): PAGES
  - Geneva, Lake street bridge........ 34, 155
  - Hoffman island, New York harbor, landing pier... 30, 57, 74, 126, 133
  - Hoffman island, New York harbor, north pier........ 57
  - Limestone creek improvement........ 35, 50, 154, 193, 197
  - Lockport, Eighteen-Mile creek culvert........ 34, 50, 57, 208, 254, 257
  - Lyons Falls, bridge over Black and Moose rivers.... 50, 52, 154, 192, 197
  - Minetto, bridge over Oswego river........ 50, 57, 193, 197
  - Orient Point, L. I., sea-wall........ 34, 50, 72, 126, 144, 148
  - Pending June 30, 1918........ 57–63
  - Rockaway Point bulkhead........ 52, 72, 125, 133
  - Rockaway Point, concrete pavement........ 57, 72, 126
  - Rome, Whitesboro street bridge........ 34, 50, 57, 192, 197
  - Special agreement, removal of bars at Scotia........ 98–9
  - Special agreement, removal of bars between Fonda and Indian Castle........ 99–100
  - Special work completed during the fiscal year........ 52
  - Special work connected with Barge canal, completed during the fiscal year........ 55
  - Special work connected with Barge canal, pending June 30, 1918 60
  - Special work pending June 30, 1918........ 57
  - Yorkville bridge........ 35, 50, 155, 192, 197
- Coöperative hydrographic survey........ 7, 38, 44, 51, 147, 148
- Coöperative topographic survey........ 7, 38
- Council of Defense, State........ 7
- Court of Claims:
  - Engineering expenses........ 51, 195, 196, 197, 255, 257
  - Surveys........ 38, 51, 156, 195, 196, 197, 210, 255, 257
- Cowaselon creek, dredging and improvement...... 34, 50, 57, 154–5, 193, 197
- Cowaselon dam, rebuilding recommended........ 152
- Craig Colony, Sonyea, survey........ 39, 74
- Crescent, Barge canal terminal........ 23
- Crescent, between Rexford and, bridge location........ 34, 51, 145, 148

D

- Dam No. 5, Mohawk river, stopping leakage........ 81, 85–8
- Dannemora prison, survey........ 39, 74
- Delaware–Greene county line, monument relocation........ 38, 271–3
- Delaware–Schoharie county boundary line........ 36, 51, 73, 146, 148
- Delaware–Schoharie county line, monument relocation........ 38, 271–3
- Defense, public, land for, at Rockaway........ 7
- Defense, State Council of........ 7
- Department honor roll........ 40–4, 83, 203
- Departments and commissions, engineering work for........ 7, 39, 74
- Dike near Indian Castle guard-gate recommended........ 116

- Division engineers' reports: PAGES
    - Eastern division.. 69–75
    - Middle division.. 151–3
    - Western division.. 201–48
- Dredging and improvement of Cowaselon creek....34, 50, 57, 154–5, 193, 197
- Durhamville aqueduct, leak.. 153

E

- East Canada creek, booms for catching debris recommended......... 115
- Eastern division:
    - Engineering expenses. (*See* "Engineering expenses.")
    - Engineer's report.. 69–75
    - Summary of construction work, by years and canals............ 64–5
- East river:
    - Greenpoint, Barge canal terminal (contract No. 19)..22, 27, 61, 130–1
    - Greenpoint, Barge canal terminal (contract No. 223).......... 125
    - Hallets Cove, Barge canal terminal.......................... 27
    - Long Island City, Rogers street, Barge canal terminal (contract No. 106)..................................22, 27, 63, 129–30
    - Long Island City, Rogers street, Barge canal terminal (contract No. 217).. 125
    - Pier 5, N. Y. city, Barge canal terminal (contract No. 56)..22, 62, 125, 127
    - Pier 5, N. Y. city, Barge canal terminal (contract No. 103-A) 22, 62, 127
    - Pier 6, N. Y. city, Barge canal terminal (contract No. 52)..22, 62, 127–8
    - Pier 6, N. Y. city, Barge canal terminal (contract No. 105)..22, 63, 129
    - Pier 6, N. Y. city, Barge canal terminal (contract No. 106).22, 63, 129–30
    - Pier 6, N. Y. city, Barge canal terminal (contract No. 207)..22, 63, 125, 128
    - Pier 6, N. Y. city, Barge canal terminal (contract No. 207-H).. 22, 63, 125, 129
    - Pier 6, N. Y. city, Barge canal terminal (contract No. 207-P).. 22, 63, 125, 129
- East 138th street, N. Y. city, Barge canal terminal (contract No. 44) 22, 27, 62, 132
- Eighteen-Mile creek culvert, Lockport.............34, 50, 57, 208, 254, 257
- Eighteen-Mile creek improvement, survey......................... 35
- Elevators, grain, recommendation................................ 29
- Ellicott creek improvement........................34, 50, 57, 207, 254, 257
- Engineering expenses:
    - Eastern division:
        - Barge canal construction:
            - Champlain canal 49, 139–40, 148
            - Erie canal 49, 137–9, 148
            - Head office account.........................49, 135–7, 148
        - Barge canal terminals............................49, 141–3, 148
        - Bridge designers, engineers, etc.......................50, 143, 148

Engineering expenses — (*Continued*):
  Eastern division — (*Continued*): PAGES
    Ordinary repairs:
      Champlain canal 49, 134, 148
      Erie canal 49, 134, 148
    Special surveys:
      Blue line 51, 144–5, 148
      Boundary line, State 51, 146, 148
      Delaware–Schoharie county boundary line 51, 146, 148
      Hydrographic survey 51, 147, 148
      Location of bridge between Crescent and Rexford 51, 145, 148
      Saratoga–Warren county boundary line 51, 147, 148
      Schenectady–Scotia bridge 51, 146, 148
    Special work:
      High street bridge, Cohoes 50, 144, 148
      Sea-wall, Orient Point, L. I. 50, 144, 148
    Summary 51, 148
  Middle division:
    Barge canal construction:
      Cayuga and Seneca canal 49, 190, 197
      Erie canal 49, 187–9, 197
      Oswego canal 49, 189–90, 197
    Barge canal terminals 49, 191, 197
    Ordinary repairs:
      Black River canal 49, 186, 197
      Erie canal 49, 186, 197
    Special surveys:
      Barge canal extension to Auburn 51, 196, 197
      Blue line.. .... 51, 194, 195, 197
      State Court of Claims 51, 195, 196, 197
    Special work:
      Canandaigua lake dredging 50, 194, 197
      Cowaselon creek improvement 50, 193, 197
      Limestone creek improvement 50, 193, 197
      Lyons Falls bridge 50, 192, 197
      Minetto bridge 50, 193, 197
      Whitesboro bridge 50, 192, 197
      Yorkville bridge 50, 192, 197
    Summary 51, 197
  Summary for state, by divisions 51
  Western division:
    Barge canal construction, Erie canal 49, 249-52, 257
    Barge canal terminals 49, 252–3, 257
    Ordinary repairs, Erie canal 49, 249, 257
    Special surveys:
      Blue line 51, 255, 257
      State Court of Claims 51, 255, 257
      Study, route of canal between Tonawanda and Buffalo.. 51, 256, 257
      Tonawanda creek, Batavia 51, 256, 257

Engineering expenses — (*Concluded*):
  Western division — (*Continued*): PAGES
    Special work:
      Canisteo river improvement 50, 253, 257
      Chadakoin river improvement 50, 254, 257
      Eighteen-Mile creek culvert, Lockport 50, 254, 257
      Ellicott creek improvement 50, 254, 257
      Hertel avenue bridge, Buffalo 50, 254, 257
    Summary 51, 257
Engineering work for State departments and commissions 7, 39, 74
Equalization and Assessment, State Board of 7
Erie canal:
  Blue line surveys. 33–4, 51, 72, 101–2, 144–5, 148, 156, 194, 197, 209, 255, 257
  Engineering expenses:
    Barge canal construction ... 49, 137–9, 148, 187–9, 197, 249–52, 257
    Ordinary repairs 49, 134, 148, 186, 197, 249, 257
  Summary of construction work by years 64–5
  (*See also* "Barge canal" *and* "Contracts.")
Erie, Lake, surveys for grants of lands under water 210
Extra work orders paid on contracts, summary by years 64–5

F

Fairport, Barge canal terminal 24
Federal Government:
  Canal fleet 13, 15
  Connections at canal termini 19–20
  Control of Barge canal 12–5
  Coöperative work with 7, 38
Flash-board operation, Rocky Rift dam, recommended 115
Flushing, N. Y. city, Barge canal terminal 27, 125
Fonda and Indian Castle, removal of bars between 99–100
Fonda, Barge canal terminal (contract No. 10-P) 23, 61, 80, 98
Fonda, Barge canal terminal (contract No. 204) 23, 56, 80, 94–5
Fort Edward, Barge canal terminal 22
Fort Plain, Barge canal terminal (contract No. 208) 23, 56, 100, 102, 113
Frankfort, Barge canal terminal (contract No. 27-P) 24, 61, 102, 112–3
Frankfort, Barge canal terminal (contract No. 204) 24, 56, 102, 113–4
Frankfort retaining dam, booms for catching debris recommended 115
Fulton, Barge canal terminal 25

G

Gaging of streams 7, 38, 44
Geneva, Lake street bridge, Cayuga and Seneca canal 34, 155
Geneva, near, railroad crossing 18, 185
Geological Survey, U. S., coöperation with 7, 38
Glen, or Mill, creek improvement, Watkins 35, 155
Gowanus bay, N. Y. city, Barge canal terminal (contract No. 55) .. 21–2, 26, 62, 126–7

PAGES
Grain elevators, recommendation 29
Grants, land 39, 267
Grants of lands under water, surveys for 74, 81–2, 126, 210
"Great Western Gateway" bridge 34, 51, 146, 148
Greene–Delaware county line, monument relocation 38, 271–3
Greene–Schoharie county line, monument relocation 38, 271–3
Greene–Ulster county boundary line 37–8
Greenpoint, N. Y. city, Barge canal terminal (contract No. 19) 22, 27, 61, 130–1
Greenpoint, N. Y. city, Barge canal terminal (contract No. 223) 125

H

Hallets Cove, N. Y. city, Barge canal terminal 27
Harlem river, E. 138th street, Barge canal terminal (contract No. 44) 22, 27, 62, 132
Head office account, engineering expenses 49, 135–7, 148
Herkimer, Barge canal terminal 23
Herkimer dam, booms for catching debris recommended 115
High street bridge, Cohoes 50, 73, 76, 144, 148
Highways:
  Mindenville to St. Johnsville, recommended 114
  Rome, at 55, 157, 166
Hoffman island, New York harbor, repairs to landing pier. 39, 57, 74, 126, 133
Hoffman island, New York harbor, repairs to north pier 57
Holley, Barge canal terminal 24
Honor roll, State Engineer's department 40–4, 83, 203
Hospital Development Commission 7
Hospital, Kings Park, L. I., survey 39, 74
Hospital, State, at Marcy, survey 39, 74
Hospital, State, at Middletown, survey 39, 74
Hospital, State, at West Haverstraw, survey 39, 74
Hudson river cities, Barge canal terminals, preliminary surveys 28, 35
Hydrographic survey, coöperative 7, 38, 44, 51, 147, 148

I

Ilion, Barge canal terminal (contract No. 204) 23, 56, 102, 113–4
Indian Castle and Fonda, removal of bars between 99–100
Indian Castle guard-gate, dike near, recommended 116
Industrial sites along canal, recommendation 32
Interstate Bridge Commission 7
Ithaca, Barge canal terminal 25

J

Jamaica Bay–Peconic Bay Canal Board 7
Jamaica bay–Peconic bay canal, survey 73, 126

K

Kings Park, L. I., hospital, survey 39, 74
Kingston, Barge canal terminal, preliminary survey 28, 35

L

PAGES

- Laboratory, testing 44, 261–6
- Lake Champlain, canal terminus 19
- Lake Erie, surveys for grants of lands under water 210
- Lake Ontario, canal terminus 19
- Land Board 7, 32, 39, 155, 267
- Land bureau:
  - Land sales by 268
  - Report 44, 267–8
- Land for public defense at Rockaway 7
- Land grants 39, 267
- Lands, Barge canal, monumenting and mapping 210
- Lands, canal, abandoned 31–2, 155
- Lands, canal, mapping, blue line 33–4, 51, 72, 101–2, 144–5, 148, 156–7, 194, 195, 197, 209, 255, 257
- Lands, tillable, in residency No. 4 116
- Lands under water, surveys for grants 74, 81–2, 126, 210
- Leakage, stopping, dam No. 5, Rotterdam 81, 85–8
- Leak, Durhamville aqueduct 153
- Limestone creek improvement 35, 50, 154, 193, 197
- Little Falls, Barge canal terminal (contract No. 101) 23, 62, 102, 112
- Little Falls, Barge canal terminal (contract No. 208) 23, 56, 100, 102, 113
- Lockport, Barge canal, lower terminal (contract No. 101) 25, 62, 236, 238
- Lockport, Barge canal, lower terminal (contract No. 106) 25, 63, 236, 238
- Lockport, Barge canal, upper and lower terminals (contract No. 210) 25, 56, 237–8
- Lockport, culvert, Eighteen-Mile creek 34, 50, 57, 208, 254, 257
- Long Island City, Rogers street, Barge canal terminal (contract No. 106) 22, 27, 63, 129–30
- Long Island City, Rogers street, Barge canal terminal (contract No. 217) 125
- Luzerne–Warrensburg township boundary line 36–7, 73
- Lyons, Barge canal terminal (contract No. 31) 24, 61, 211, 216–7
- Lyons, Barge canal terminal (contract No. 106) 24, 63, 211, 217
- Lyons, east of, railroad crossings 18, 206, 218, 229
- Lyons Falls, bridge over Black and Moose rivers 50, 52, 154, 192, 197

M

- Maintenance of Barge canal 18–9, 98–100
- Malone armory site, survey 39, 74
- Mapping and monumenting Barge canal lands 210
- Mapping canal lands, blue line 33–4, 51, 72, 101–2, 144–5, 148, 156–7, 194, 195, 197, 209, 255, 257
- Marcy State hospital, survey 39, 74
- Mechanicville, Barge canal terminal 22
- Medina, Barge canal terminal (contract No. 211) 25, 56, 234, 235–6
- Middle division:
  - Engineering expenses. (*See* "Engineering expenses.")
  - Engineer's report 151–3
  - Summary of construction work by years and canals 64–5

PAGES
Middleport, Barge canal terminal (contract No. 54).........25, 56, 234, 236
Middletown State hospital, survey.............................. 39, 74
Military service, department engineers......................40–4, 83, 203
Mill, or Glen, creek improvement, Watkins...................... 35, 155
Mill river improvement, survey................................ 35
Mindenville bridge, vicinity of, stake lights recommended........... 115
Mindenville to St. Johnsville, highway recommended.............. 114
Minetto, bridge over Oswego river......................50, 57, 193, 197
Mohawk river, booms for catching debris recommended........... 115
Mohawk river, dam No. 5, stopping leakage...................... 81, 85–8
Monumenting and mapping Barge canal lands..................... 210
Monument relocation, Schoharie–Greene, Greene–Delaware, Delaware–Schoharie county lines..............................38, 271–3
Mooring places, investigation for, recommendation.................70–1, 83–4
Moose and Black rivers, Lyons Falls, bridge............50, 52, 154, 192, 197
Mott Haven, New York city, Barge canal terminal (contract No. 44)..22, 27, 62, 132

N

Navigation on canals... 8, 15
Newark, Barge canal terminal (contract No. 211)........24, 56, 211, 217–8
Newark, east of, railroad crossings............................. 218
Newburgh, Barge canal terminal, preliminary survey.............. 28, 35
New Jersey, New York, Port and Harbor Development Commission, survey for 39
Newtown creek, N. Y. city, Barge canal terminal (contract No. 19) 22, 27, 61, 130–1
New York–Canadian boundary line......................51, 73, 146, 148
New York city, Barge canal terminals:
    East 138th street (contract No. 44)....................22, 27, 62, 132
    Flushing 27, 125
    Gowanus bay (contract No. 55)......................21–2, 26, 62, 126–7
    Greenpoint (contract No. 19)........................22, 27, 61, 130–1
    Greenpoint (contract No. 223)............................. 125
    Hallets Cove 27
    Long Island City, Rogers street (contract No. 106)..22, 27, 63, 129–30
    Long Island City, Rogers street (contract No. 217).......... 125
    Mott Haven (contract No. 44)..........................22, 27, 62, 132
    Newtown creek (contract No. 19)....................22, 27, 61, 130–1
    Pier 5, East river (contract No. 56)..................22, 62, 125, 127
    Pier 5, East river (contract No. 103-A)...................22, 62, 127
    Pier 6, East river (contract No. 52)....................22, 62, 127–8
    Pier 6, East river (contract No. 105)......................22, 63, 129
    Pier 6, East river (contract No. 106)..................22, 63, 129–30
    Pier 6, East river (contract No. 207)...............22, 63, 125, 128
    Pier 6, East river (contract No. 207-H)..............22, 63, 125, 129
    Pier 6, East river (contract No. 207-P)..............22, 63, 125, 129
    West 53d street (contract No. 38)............22, 26–7, 61, 125, 131–2

PAGES

New York city, railroads entering, belt line connection, survey...... 39

New York city, Wards island, survey...... 39, 74

New York harbor, Hoffman island, repairs to landing pier......39, 57, 74, 126, 133

New York harbor, Hoffman island, repairs to north pier...... 57

New York, New Jersey Port and Harbor Development Commission, survey for...... 39

New York–Pennsylvania boundary line......51, 73, 146, 148

Niagara river, canal terminus...... 19

Niagara river, surveys for grants of land under water...... 210

North river, West 53d street, N. Y. city, Barge canal terminal (Contract No. 38)......22, 26–7, 61, 125, 131–2

North Tonawanda, Barge canal terminal (contract No. 101)....25, 62, 239, 243–4

North Tonawanda, Barge canal terminal (contract No. 209)......25, 56, 243

North Tonawanda, surveys for grants of lands under water...... 210

O

Ordinary repairs to canals, Engineering expenses. (*See* "Engineering expenses.")

Orient Point, L. I., sea-wall......34, 50, 72, 126, 144, 148

Oswego:

- Barge canal, lake terminal (contract No. 33)......25, 56, 175, 178–9
- Barge canal, lake terminal (contract No. 33-P)......25, 61, 175, 179
- Barge canal, lake terminal (contract No. 59)......25, 62, 175, 179
- Barge canal, lake terminal (contract No. 60)......25, 62, 175, 180
- Barge canal, lake terminal (contract No. 106)......25, 63, 175, 180
- Barge canal, river terminal (contract No. 30)......25, 61, 175, 177–8
- Canal terminus...... 19

Oswego canal:

- Blue line surveys......33–4, 51, 156–7, 195, 197
- Engineering expenses, Barge canal construction......49, 189–90, 197
- Summary of construction work by years...... 64–5

Oswego, curved dam, repairs recommended...... 152

Owasco outlet dam, repairs recommended...... 152

P

Palmyra, Barge canal terminal...... 24

Pavement at Rockaway Point......57, 72, 126

Peconic Bay–Jamaica Bay Canal Board...... 7

Peconic bay–Jamaica bay canal, survey...... 73, 126

Pennsylvania–New York boundary line......51, 73, 146, 148

Pier 5, East river, N. Y. city, Barge canal terminal (contract No. 56)......22, 62, 125, 127

Pier 5, East river, N. Y. city, Barge canal terminal (contract No. 103-A)......22, 62, 127

Pier 6, East river, N. Y. city: PAGES
  Barge canal terminal (contract No. 52) 22, 62, 127–8
  Barge canal terminal (contract No. 105) 22, 63, 129
  Barge canal terminal (contract No. 106) 22, 63, 129–30
  Barge canal terminal (contract No. 207) 22, 63, 125, 128
  Barge canal terminal (contract No. 207-H) 22, 63, 125, 129
  Barge canal terminal (contract No. 207-P) 22, 63, 125, 129
Pittsford, near, railroad crossings 206, 229
Plattsburg, Barge canal terminal 23
Port Henry, Barge canal terminal 23
Poughkeepsie, Barge canal terminal, preliminary survey 28, 35
Prison, Dannemora, survey 39, 74
Prison, Wingdale, survey 37, 74
Public defense, land for, at Rockaway 7

Q

Quarantine station, Hoffman island, New York harbor, repairs to landing pier 39, 57, 74, 126, 133
Quarantine station, Hoffman island, New York harbor, repairs to north pier 57

R

Railroad crossings:
  Brewerton 18
  Cayuga 18, 185
  Geneva 18, 185
  Lyons, east of 18, 206, 218, 229
  Newark, east of 218
  Pittsford, near 206, 229
  Rochester, near 18, 206, 229, 234
  Schenectady 18
  Seneca Falls, near 18, 185
  Tonawanda 18, 206–7
Recommendations:
  Barge canal, Federal connections at termini 19–20
  Barge canal maintenance 18–9
  Blue line surveys 34
  Booms for catching debris 115
  Boundary lines 35–6, 37, 38
  Bridge west of lock No. 18 115–6
  Canal outlets 19–20
  Chittenango creek dam, rebuilding 152
  Completion of Barge canal terminals 28
  Comprehensive surveys for proposed stream improvements 35
  Cowaselon dam, rebuilding 152
  Dike near Indian Castle guard-gate 116
  Flash-board operation, Rocky Rift dam 115
  Foot-bridge across Castle creek 115
  Grain elevators 29

Recommendations — (*Continued*): PAGES
Highway, Mindenville to St. Johnsville 114
Hydrographic survey 38
Industrial sites along canal 32
Investigation for mooring places 70–1, 83–4
Land grants 39
Oswego, curved dam, repairs 152
Owasco outlet dam, repairs 152
Planting of trees on canal lands 32-3
Retention of right of way 70, 100–1
Spillway for Castle creek entrance 115
Stake lights, vicinity of Mindenville bridge 115
Stream gaging 38
Surplus waters, Barge canal 20–1
Surveys for Court of Claims 38
Surveys for State departments and commissions 39
Sweep-boats 70
Tillable lands in Erie residency No. 4 116
Repairs to landing pier, Hoffman island, New York harobr 39, 57, 74, 126, 133
Repairs to north pier, Hoffman island, New York harbor 57
Reports:
Barge canal, State Engineer's 8–21
Barge canal terminals, State Engineer's 21-9
Boundary lines 36–8
Division Engineers':
Eastern division 69-75
Middle division 151–3
Western division 201–48
Hydrographic survey, coöperative 7, 44
Land bureau 44, 267–8
Senior assistant engineers'. (*See* "Barge canal, residencies, reports" *and* "Barge canal terminals, residencies, reports.")
State Engineer and Surveyor's 7–45
Stream gaging 7, 44
Tests 44, 261–6
Restoring Black River canal 155
Rexford, between Crescent and, bridge location 34, 51, 145, 148
Right of way, retention recommended 70, 100–1
River Regulating Section of the Conservation Commission 7
Rochester, Barge canal terminal (contract No. 48) 24, 62, 229, 233–4
Rochester, Barge canal terminal (contract No. 57) 229
Rochester, near, railroad crossings 18, 206, 229, 234
Rochester, vicinity of, Barge canal work 9, 11–2, 204–5, 206, 225–34
Rockaway, land for public defense 7
Rockaway Point bulkhead 52, 72, 125, 133
Rockaway Point, pavement at 57, 72, 126
Rocky Rift dam, flash-board operation recommended 115

Rome: PAGES
  Barge canal terminal (contract No. 16-P)............24, 56, 157, 165
  Barge canal terminal (contract No. 101)............24, 62, 157, 165–6
  Barge canal terminal (contract No. 205)............24, 56, 157, 162–3
  Dive culvert, survey 35, 152–3
  Highways at 55, 157, 166
  Whitesboro street bridge 34, 50, 57, 192, 197
Rotterdam, dam No. 5, stopping leakage..........................81, 85–8
Rotterdam, survey of bridge approaches, dam No. 5............... 82
Rouses Point, Barge canal terminal (contract No. 26)...........23, 61, 125

S

Sale of abandoned canal lands.................................. 31–2
Sale of land by the land bureau................................ 268
Sand tests, report 264
Saratoga–Warren county boundary line..............36–7, 51, 73, 147, 148
Schenectady, Barge canal terminal (contract No. 8-P)........23, 61, 80, 95
Schenectady, Barge canal terminal (contract No. 64)........23, 62, 80, 95–6
Schenectady, Barge canal terminal (contract No. 103-A)......23, 62, 80, 96
Schenectady, Barge canal terminal (contract No. 106)........23, 63, 80, 96
Schenectady, Barge canal terminal (contract No. 204)......23, 56, 80, 94–5
Schenectady, railroad crossing 18
Schenectady–Scotia bridge 34, 51, 146, 148
Schoharie–Delaware county boundary line..............36, 51, 73, 146, 148
Schoharie–Delaware county line, monument relocation.............38, 271–3
Schoharie–Greene county line, monument relocation...............38, 271–3
Schuyler mansion, Albany, survey............................... 39, 74
Schuylerville, Barge canal terminal (contract No. 13).........22, 56, 120–1
Scotia, removal of bars below lock No. 8....................... 98–9
Scotia–Schenectady bridge 34, 51, 146, 148
Sea-wall, Orient Point, L. I......................34, 50, 72, 126, 144, 148
Seneca Falls, Barge canal terminal............................. 25
Seneca Falls, near, railroad crossing........................... 18, 185
Sonyea, Craig Colony, survey 39, 74
Special appropriations 34–5, 72–4, 154–5, 207–9
Special work connected with Barge canal construction..55, 60, 89–90, 98–100, 166, 211–2

Special works:
  Barge canal, connected with..........55, 60, 89–90, 98–100, 166, 211–2
  Black River canal, restoring 155
  Buffalo, Hertel avenue bridge 34, 50, 57, 209, 254, 257
  Canandaigua harbor, pier and breakwater......34, 50, 57, 155, 194, 197
  Canisteo river improvement 50, 253, 257
  Chadakoin river improvement 50, 57, 208–9, 254, 257
  Cohoes, High street bridge......................50, 73, 76, 144, 148
  Contracts completed during the fiscal year..................... 52
  Contracts pending June 30, 1918................................ 57
  Cowaselon creek, dredging and improvement..34, 50, 57, 154–5, 193, 197
  Ellicott creek improvement...............34, 50, 57, 207, 254, 257

Special works — (*Continued*): PAGES
Engineering expenses. (*See* " Engineering expenses.")
Geneva, Lake street bridge 34, 155
Hoffman island, New York harbor, repairs to landing pier..39, 57, 74, 126, 133
Hoffman island, New York harbor, repairs to north pier....... 57
Limestone creek improvement 34, 50, 154, 193, 197
Lockport, Eighteen-Mile creek culvert.........34, 50, 57, 208, 254, 257
Lyons Falls, bridge over Black and Moose rivers...50, 52, 154, 192, 197
Minetto, bridge over Oswego river..................50, 57, 193, 197
Orient Point, L. I., sea-wall 34, 50, 72, 126, 144, 148
Rockaway Point, bulkhead...........................52, 72, 125, 133
Rockaway Point, pavement 57, 72, 126
Rome, Whitesboro street bridge 34, 50, 57, 192, 197
Yorkville bridge 35, 50, 155, 192, 197
Spencerport, Barge canal terminal 24
Stake lights, vicinity of Mindenville bridge, recommended........ 115
State Board of Canvassers 7
State Board of Equalization and Assessment...................... 7
State boundary line surveys 51, 73, 146, 148
State Conservation Commission, River Regulating Section......... 7
State Council of Defense 7
State Court of Claims 38, 51, 156, 195, 196, 197, 210, 255, 257
State departments and commissions, work for...................7, 39, 74
State Engineer and Surveyor:
Acquisition of Land for Public Defense at Rockaway, Commissioner for 7
Attorney-General, work for 38
Barge canal report 8–21
Barge canal terminal report.................................... 21–29
Boundary line recommendations 35–6, 37, 38
Canal Board, member of 7
Canvassers, State Board of, member of........................... 7
Commission to Investigate Canal between Tonawanda and Buffalo, member of 7
Committee to Investigate the Water-Powers of the State, member of 7
Conservation Commission, River Regulating Section, member of. 7
Coöperation with Federal Government........................ 7, 38
Coöperation with U. S. Geological Survey................... 7, 38
Defense, State Council of, member of............................ 7
Department honor roll 40–4, 83, 203
Engineering work for State departments and commissions...... 7
Equalization and Assessment, State Board of, member........ 7
Hospital Development Commission, member of................ 7
Interstate Bridge Commission, member of................... 7
Jamaica Bay–Peconic Bay Canal Board, member of........... 7
Land Board, member of 7
Report 7–45
Special works report 34–5
Topographic survey, coöperation 7, 38

PAGES

- State Hospital Development Commission.......... 7
- State office building, Albany, survey.......... 39, 74
- St. Johnsville, Barge canal terminal (contract No. 40)....23, 56, 102, 111–2
- St. Johnsville to Mindenville, highway recommended.......... 114
- Stream gaging 7, 38, 44
- Stream improvements, comprehensive surveys.......... 35
- Surplus waters, Barge canal 20–1
- Surveys:
  - Abandoned canal lands 155
  - Albany, Schuyler mansion 39, 74
  - Albany, State office building.......... 39, 74
  - Attorney-General, for....38, 51, 74, 126, 156, 195, 196, 197, 210, 255, 257
  - Barge canal extension to Auburn..........34, 51, 196, 197
  - Belt line connection, railroads entering N. Y. city.......... 39
  - Blue line...33–4, 51, 72, 101–2, 144–5, 148, 156–7, 194, 195, 197, 209, 255, 257
  - Boundary lines 35–8, 51, 73, 146–7, 148
  - Bridge approaches, dam No. 5, Rotterdam.......... 82
  - Canal route between Tonawanda and Buffalo, study....34, 51, 256, 257
  - Court of Claims..........38, 51, 156, 195, 196, 197, 210, 255, 257
  - Dannemora prison 39, 74
  - Delaware–Schoharie county boundary line..........36, 51, 73, 146, 148
  - Eighteen-Mile creek improvement 35
  - Glen, or Mill, creek improvement, Watkins.......... 35, 155
  - Hudson river terminals, Poughkeepsie, Kingston, Newburgh, Yonkers 28, 35
  - Hydrographic, coöperative 7, 38, 44, 51, 147, 148
  - Jamaica bay–Peconic bay canal 73, 126
  - Kings Park, L. I., hospital.......... 39, 74
  - Lands under water 74, 81–2, 126, 210
  - Location of bridge between Crescent and Rexford......34, 51, 145, 148
  - Malone armory site 39, 74
  - Marcy State hospital 39, 74
  - Middletown State hospital 39, 74
  - Mill river improvement 35
  - New York, New Jersey Port and Harbor Development Commission, survey for 39
  - Rome, dive culvert 35, 152–3
  - Saratoga–Warren county boundary line..........36–7, 51, 73, 147, 148
  - Schenectady–Scotia bridge..........34, 51, 146, 148
  - Schoharie–Greene, Greene–Delaware, Delaware–Schoharie county lines, monument relocation..........38, 271–3
  - Sonyea, Craig Colony.......... 39, 74
  - Special, engineering expenses. (*See* "Engineering expenses.")
  - State departments and commissions.......... 7, 39
  - Stream improvements, comprehensive for.......... 35
  - Tonawanda creek, Batavia 34, 51, 256, 257
  - Topographic, coöperative 7, 38
  - Troy armory site..........39, 74, 76
  - Ulster–Greene county boundary line.......... 37–8

Surveys — (*Continued*): PAGES
- Wards island, N. Y. city ... 39, 74
- Warrensburg–Luzerne township boundary line ... 36–7, 73
- West Haverstraw State hospital ... 39, 74
- Wingdale prison ... 39, 74

Sweep-boats recommended ... 70
Syracuse, Barge canal terminal (contract No. 20) ... 24, 61, 167, 173–4
Syracuse, Barge canal terminal (contract No. 106) ... 24, 63, 167, 174–5
Syracuse, Barge canal terminal (contract No. 213) ... 24, 63, 167, 174

T

Terminals, Barge canal. (*See* "Barge canal terminals.")
Termini, Barge canal, Federal connections ... 19–20
Testing laboratory ... 44, 261–6
Tests:
- Cement ... 261–4
- Concrete ... 264–5
- Miscellaneous ... 265–6
- Sand ... 264

Thomson, Barge canal terminal ... 22
Tillable lands in residency No. 4 ... 116
Tonawanda:
- Barge canal terminal (contract No. 106) ... 25, 63, 239, 247
- Barge canal terminal (contract No. 209) ... 25, 56, 243
- Canal route between Buffalo and, study of ... 34, 51, 256, 257
- Canal terminus ... 19
- Railroad crossings ... 18, 206–7
- Surveys for grants of land under water ... 210

Tonawanda and Buffalo, Commission to investigate canal between ... 7
Tonawanda creek survey, Batavia ... 34, 51, 256, 257
Topographic survey, coöperative ... 7, 38
Traffic, canal:
- Development of new ... 16
- Grain ... 17, 29
- Use of canal ... 15–7, 71
- War munitions ... 16

Tree planting on canal, recommendation ... 32–3
Troy armory site, survey ... 39, 74, 76
Troy, Barge canal, lower terminal (contract No. 106) ... 22, 63, 76, 79
Troy, Barge canal, upper terminal (contract No. 41) ... 22, 76

U

Ulster–Greene county boundary line ... 37–8
U. S. Government:
- Canal fleet ... 13, 15
- Connections at canal termini ... 19–20
- Control of Barge canal ... 12–5
- Coöperative work with ... 7, 38

PAGES
U. S. hydrographic survey.........................7, 38, 44, 51, 147, 148
U. S. topographic survey 7, 38
Utica:
  Barge canal terminal (contract No. 15-D)...........24, 56, 157, 163–4
  Barge canal terminal (contract No. 15-M)..............24, 61, 157, 164
  Barge canal terminal (contract No. 63)..............24, 62, 157, 164
  Barge canal terminal (contract No. 106).............24, 63, 157, 165
  Barge canal terminal (contract No. 205)............24, 56, 157, 162–3

W

War conditions, cancelation and completion of contract under.... 27–31
Wards island, N. Y. city, survey............................ 39, 74
Warren–Saratoga county boundary line..............36–7, 51, 73, 147, 148
Warrensburg–Luzerne township boundary line.................... 36–7, 73
War service, department engineers..........................40–4, 83, 203
Waterford, Barge canal terminal................................ 23
Waterford, canal terminus 19
Water-Powers of the State, Committee to Investigate............. 7
Waters, surplus, Barge canal 20–1
Waterways, appreciation of value increasing..................... 17
Watkins, Glen, or Mill, creek improvement.................... 35, 155
Weedsport, Barge canal terminal................................. 24
West Canada creek, booms for catching debris recommended........ 115
Western division:
  Engineering expenses. (*See* "Engineering expenses.")
  Engineer's report 201–48
  Summary of construction work by years......................... 64–5
West Haverstraw State hospital, survey 39, 74
West 53d street, N. Y. city, Barge canal terminal (contract No. 38)..22, 26–7, 61, 125, 131–2
Whitehall, Barge canal terminal (contract No. 101)..........22, 62, 124–5
Whitehall, Barge canal terminal (contract No. 201)............22, 63, 124
Whitehall, canal terminus 19
Wingdale prison, survey.. 39, 74
Work orders, extra, paid on contracts, summary by years.......... 64–5

Y

Yonkers, Barge canal terminal, preliminary survey............... 28, 35
Yorkville bridge 35, 50, 155, 192, 197

Legislative Document No. 31

STATE OF NEW YORK

SUPPLEMENT

TO THE

ANNUAL REPORT

OF THE

State Engineer and Surveyor

For the Fiscal Year Ended June 30, 1918

ALBANY
J. B. LYON COMPANY, PRINTERS
1919

REPORT

ON

HYDRAULIC DATA
1918

DEPARTMENT OF STATE ENGINEER AND SURVEYOR

COMPRISING THE NINETEENTH ANNUAL REPORT ON STREAM GAGING

M. W. GRIMES,
Assistant Engineer

TABLE OF CONTENTS

PAGE

Report on stream gaging 7
  Scope 9
Report of U. S. Geological Survey 11
  Explanation of data 14
  Accuracy and reliability of data 16
Hydraulic data 17
  Definition of terms 17
  Convenient equivalents 19
St. Lawrence river drainage 21
  Niagara river drainage 23
    Niagara river 23
    Cattaraugus creek 24
    Tonawanda creek 27
    Little Tonawanda creek 30
  Genesee river drainage basin:
    Genesee river 33
    Canaseraga creek 50
    Keshequa creek 57
    Black creek, Monroe county 59
    Canadice lake 61
  Oswego–Oneida–Seneca river drainage basin 63
    Oswego river 68
    Seneca river basin 87
      Seneca river 88
      Keuka lake 100
      Seneca lake 102
      Cayuga lake 105
      Clyde river 107
      Ganargua creek 110
      Canandaigua outlet 111
      Owasco outlet 115
      Onondaga lake 118
        Onondaga creek 121
    Oneida river basin 123
      Oneida river 124
      Oneida lake 131
      Chittenango creek 134
      Butternut creek 136
      Limestone creek 140
  Black river drainage basin:
    Black river 145
    Moose river 158
    Beaver river 164
  St. Lawrence river drainage below Lake Ontario:
    Oswegatchie river 168
    Raquette river 175
    St. Regis river 178

PAGE
Lake Champlain drainage basin 181
  Lake Champlain 182
    Wood creek 187
    Lake George 194
    Ausable river 196
    Saranac river 201
Hudson river drainage basin 205
  Hudson river 207
    Cedar river 255
    Indian river 257
    Schroon river 261
    Sacandaga river 264
    Hoosic river 269
    Mohawk river 276
      Nine-Mile creek 321
      West Canada creek 323
      East Canada creek 332
      Schoharie creek 335
    Esopus creek 343
    Rondout creek 349
Delaware river drainage basin:
  Delaware river 355
    Beaver kill 361
    West branch 363
Susquehanna river drainage basin:
  Susquehanna river 366
    Chenango river 369
    Chemung river 372
Allegheny river drainage basin:
  Allegheny river 375
    Chadakoin river 380
Summary of discharges per square mile 384
Climatological data 386
  Precipitation records 386
Index 405

ILLUSTRATION

FACING PAGE
Standard vertical staff gage, State Engineer's Department 8

REPORT ON STREAM GAGING FOR 1918

Hon. FRANK M. WILLIAMS, *State Engineer and Surveyor:*

Sir.— I have the honor to submit a report on and the results of the hydraulic work of the Department of State Engineer and Surveyor for the fiscal year ended June 30, 1918.

This report contains hydraulic and climatological data obtained during that period, as follows: Observations of water-surface elevations, records of the discharge of streams and precipitation in the Barge canal zone, collected by this Department; gaging records of streams throughout the state, furnished by the United States Geological Survey in coöperation either with this Department or with the New York State Conservation Commission; stream discharge and precipitation, mainly in the Catskill watersheds, supplied by the Board of Water Supply of the city of New York; United States Weather Bureau records, and other stream gagings furnished by corporations or individuals. Credit for same, where due, is given in connection with the several station records. The aim of this report has been to publish not simply data secured by this Department but all available stream flow data in the state during the year in one volume for the convenience of the public. This comprehensive treatment does not apply, however, to rainfall records.

During the year the following stations maintained by this Department have been abandoned:

Erie canal above State dam, Tonawanda.
Barge canal below lock No. 7, Oswego.
Seneca river at Mud lock.*
Onondaga outlet at Long Branch.*
Hudson river at B. & M. R. R. bridge, Mechanicville.
Hoosic river at Hoosick Falls.
Mohawk river above dam at Ridge Mills.
Mohawk river below dam at Ridge Mills.
Mohawk river below State dam at Rome.†
Mohawk river at Utica.

---

* The new station on Onondaga outlet at Long Branch boat-house is to take the place of the abandoned gages at Onondaga outlet and at Mud lock and is located near the former.

† The new station above retention dam supersedes the station below State dam.

New stations have been established as follows:

Onondaga outlet at Long Branch boat-house.*
Mohawk river above retention dam at Rome.†
Mohawk river east of west guard-gate at Rome.
Barge canal west of west guard-gate at Rome.

Precipitation stations have been established at the following points: Medina, Macedon, Newark, Clyde, Mays Point, Baldwinsville, New London, Boonville, Whitehall, Smith's Basin, Schuylerville, Delta dam, Hinckley dam, Canajoharie and Scotia.

The standard types of gages and bench-marks adopted by this Department are shown on the accompanying illustration and also in the book of "Instructions Regarding Stream Gages," published by the Department in pamphlet form. Type A and Type B gages in the station descriptions are those shown on this illustration.

Gages located at points convenient to Barge canal locks, dams or other structures, where employees of the Department of Public Works are stationed, are read by these men.

The publication of gage heights in connection with discharge tables furnished by the United States Geological Survey has been discontinued, except for stations on streams tributary to the Barge canal system.

Stream measurement work for the state of New York is done in two ways: First, actually by the Department of the State Engineer and Surveyor in the Barge canal zone; second, throughout the remainder of the state by the United States Geological Survey under Mr. C. C. Covert, District Engineer, funds for which work during the fiscal year ended June 30, 1918, were supplied as follows: By the Department of the State Engineer and Surveyor, $2,500; New York State Conservation Commission, $10,000; United States Geological Survey, $3,500.

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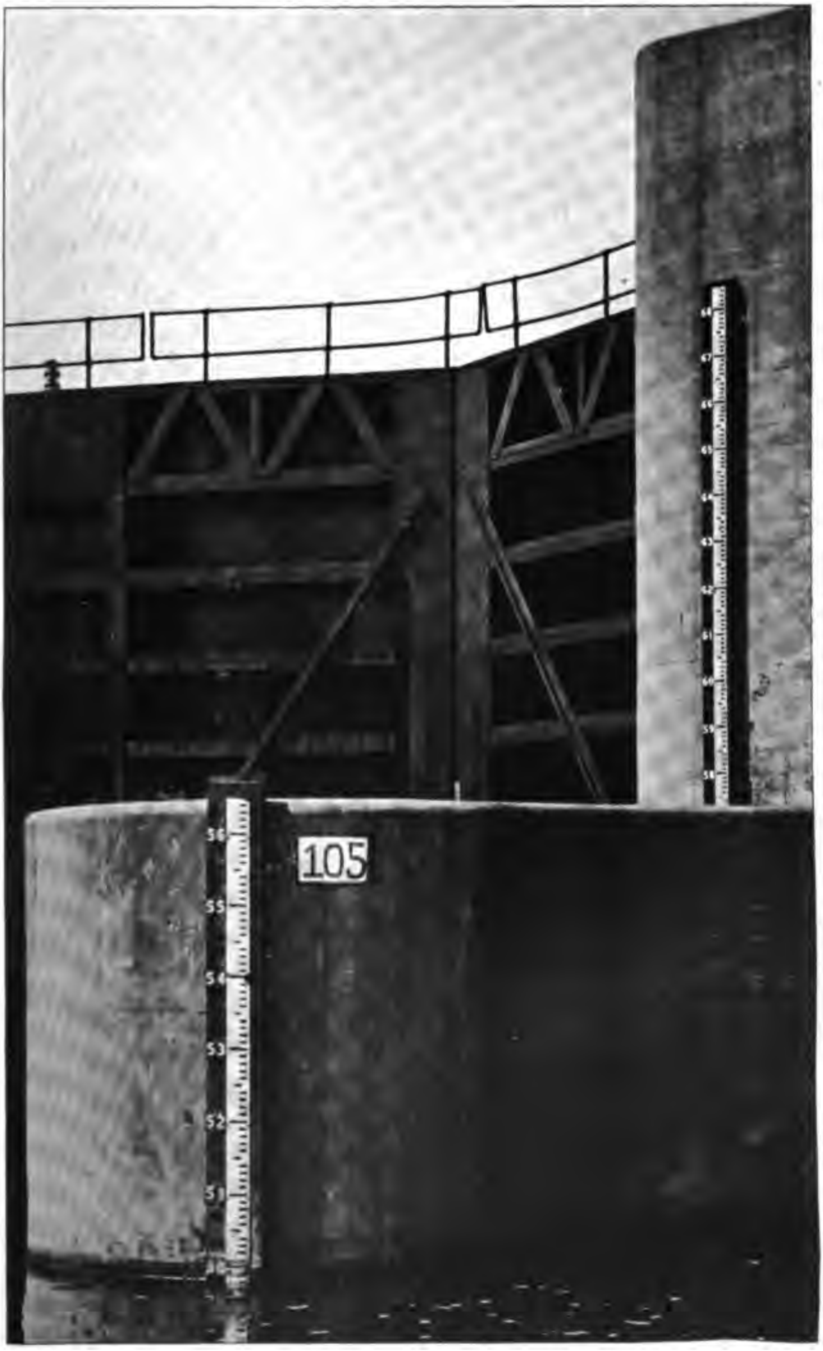
* The new station on Onondaga outlet at Long Branch boat-house is to take the place of the abandoned gages at Onondaga outlet and at Mud lock and is located near the former.

† The new station above retention dam supersedes the station below State dam.



Standard Vertical Staff Gage, State Engineer's Department

View of a Type A gage. Method of erection in two sections, where low-water gage cannot be extended for high-water readings. Bench-marks are seen in the walls at elevations 52.0 and 59.0 Type B gage differs only in manner of attaching, being set at right angle to face of wall.

SCOPE

This report contains records from 186 stream gaging stations, at 67 of which discharge is obtained, and 71 precipitation stations, maintained as shown below:

MAINTAINED BY	Stream stations	Discharge records	Precipitation stations
	No.	*No.*	*No.*
Department of State Engineer	124	13	16
U. S. Geological Survey with Department of State Engineer	11	11	......
U. S. Geological Survey with State Conservation Commission	38	35	......
Board of Water Supply of New York City	5	5	43
U. S. Weather Bureau with Department of State Engineer	1	......	6
Miscellaneous	7	3	6
Totals	186	67	71

Gages maintained by this Department to determine water-surface elevations are in general read to the nearest tenth foot with only occasional half-tenth foot readings (there are a few gages read in inches) and the hundredths of feet appearing in the tables of water-surface elevations are due to the elevations of the zero of the gage and should not be understood to indicate readings to hundredths of feet. The closeness to which readings are made will be evident upon an inspection of each table.

In a report of this kind, where the accuracy of the data from which the tables and computations are made depends largely on the care of the observers at the various stations and on natural conditions affecting stream flow, apparent inconsistencies will be found, but it is believed that the observers are in general faithful in the performance of their duties and that such errors as may occur do not seriously impair the value of the records.

For an explanation of the data you are referred to those sections of the report of Mr. C. C. Covert, District Engineer, United States Geological Survey, headed "Explanation of Data," and "Accuracy and Reliability of Data" (pp. 14–16), which cover the same ground and render a repetition here needless.

In closing I wish to acknowledge the uniform courtesy and valuable assistance I have received from Mr. Covert and his assistants in connection with this work.

Mr. Covert's report of the work of the United States Geological Survey in coöperation with the State of New York, a statement defining certain hydraulic terms used, a table of convenient equivalents, the hydraulic data and the climatological data are attached hereto in the order named.

Respectfully submitted,

M. W. GRIMES,

Assistant Engineer.

February 19, 1919.

REPORT OF UNITED STATES GEOLOGICAL SURVEY

DEPARTMENT OF THE INTERIOR

UNITED STATES GEOLOGICAL SURVEY

WATER RESOURCES BRANCH

ALBANY, N. Y., *February* 8, 1919.

Hon. FRANK M. WILLIAMS, *State Engineer and Surveyor,*
Albany, N. Y.:

Dear Sir.— Transmitted herewith is a report on the hydrometric work carried on by the U. S. Geological Survey, in coöperation with the State of New York, for the fiscal year ended June 30, 1918.

The work has been done in coöperation with your Department and with the Conservation Commission, Division of Waters, under the general supervision of Mr. N. C. Grover, Chief Hydraulic Engineer, and Mr. John C. Hoyt, Engineer in charge of surface-waters for the Geological Survey.

The accompanying report was prepared by Mr. O. W. Hartwell, Assistant Engineer, assisted by Mr. E. D. Burchard and Mr. Max H. Carson, Assistant and Junior Engineers, respectively. The field data were collected chiefly by Mr. E. D. Burchard and Mr. J. Wendell Moulton.

Acknowledgments are due engineers of your Department and of the Conservation Commission for assistance rendered in field and office.

Very truly yours,

C. C. COVERT,

District Engineer.

REPORT ON HYDROGRAPHIC INVESTIGATIONS CARRIED ON BY THE UNITED STATES GEOLOGICAL SURVEY IN COOPERATION WITH THE STATE OF NEW YORK CONSERVATION COMMISSION AND STATE ENGINEER AND SURVEYOR

By C. C. COVERT, *District Engineer*

GENERAL STATEMENT

During the year ended June 30, 1918, there was considerable interruption to the work because of war-time conditions. Some of the men were in training camps and one junior engineer, Mr. A. H. Davison, was commissioned First Lieutenant in the 303d Engineers for service in France. We also experienced considerable difficulty in securing labor and material. Prices were abnormally high and the policy necessarily adopted was to maintain only those stations already established and to start no new work. These conditions, together with the fact that a portion of the appropriation was under the budget system, made it impossible to use up the entire allotment.

The outstanding feature for the year was the low water in January. The mean for this month was not only the minimum for the year but the lowest January on record.

Ice conditions began to form in the "North Country" the last of November and they steadily increased up to about the first of February, when there was a slight disturbance. The ice did not go out, however, until about April 1.

In the southern part of the state backwater from ice obstruction began to appear early in December. The warm wave the first of January started the ice to move, but it was soon checked and did not break up until the last of February.

SCOPE OF WORK

There were maintained during the year 48 stations from which discharge estimates are published, giving a total of 586 months' records, or an average of 10.9 months per station. The total number of discharge measurements made was 371, or an average of 7.5 measurements per station of 12 months' records.

APPROPRIATIONS AND EXPENDITURES

The appropriations and expenditures for the work were as follows:

APPROPRIATIONS.

State Conservation Commission	$10,000.00	
State Engineer and Surveyor.......	2,500.00	
United States Geological Survey.....	3,500.00	
		$16,000.00

Appropriations available for 1918–1919.

State Conservation Commission.....	$10,000.00
State Engineer and Surveyor........	2,500.00
United States Geological Survey....	4,000.00
	$16,500.00

EXPENDITURES.

Principal items of cost.

Observers' pay	$1,847.19
Operation and maintenance.........	5,070.12
Construction	715.31
Office work	3,151.38
Top cost	3,139.82
Non-expendable property	709.34
	$14,633.16

Distribution.

State Conservation Commission	$8,859.30	
State Engineer and Surveyor	2,172.19	
United States Geological Survey.....	3,601.67	
		14,633.16

Unexpended balance	$1,366.84

The total cost per station of 12 months' records was $313.99, or an average of $26.17 per month's record.

EXPLANATION OF DATA

The stations discussed are considered in order downstream. Records for all stations on the main river from its source to its mouth are presented first and records for its tributaries in regular order, from source to mouth, follow, all records for each tributary drainage basin being given before those of the next basin below.

For each regular current-meter gaging station the following data, so far as available, are given: Description of station, list of discharge measurements, table of daily discharge, table of monthly and yearly discharge and run-off. For stations located on streams tributary to the Barge canal a table of daily gage heights is also given.

In addition to statements regarding the location and installation of current-meter stations, the descriptions give information in regard to any conditions which may affect the constancy of the relation of gage height to discharge, covering such factors as ice, logging, shifting channels, and backwater; also information regarding diversions which decrease the total flow at the measuring section. Statements are also made regarding the accuracy and reliability of the data.

The discharge-measurement table gives the results of the discharge measurements made during the year, including the date, name of hydrographer, gage height in feet, and discharge in second-feet.

Where published, the table of daily gage heights records the fluctuations of the stage of the river as found from the mean of the gage readings taken each day. At stations not equipped with recording instruments, the gage is usually read by the observer in the morning and in the evening. The gage height given in the table represents the elevation of the surface of the water above the zero of the gage. All gage heights affected by the presence of ice in the streams, or by backwater from obstructions, are published as recorded, with suitable foot-notes. The rating table is not applicable for such periods unless the proper corrections to the gage heights are known and applied. Attention is called to the fact that the zero of the gage is placed at an arbitrary datum and has no relation to zero flow or the bottom of the river. In general, the zero is located somewhat below the lowest known flow, so that the readings shall not have a negative value.

The discharge measurements and gage heights are the base data from which rating tables, daily-discharge tables and monthly-discharge tables are computed.

The rating table gives, either directly or by interpolation, the discharge in second-feet corresponding to every stage of the river recorded during the period for which it is applicable. Rating tables are not published in this report, but if desired for the purpose of verifying the published results they can be made from the daily gage heights and daily discharge as follows:

First, plot the discharge measurements for the current and earlier years on cross-section paper with gage heights in feet as ordinates and discharge in second-feet as abscissas. Then, tabulate a number of gage heights taken from the daily gage-height table* for the complete range of stage given and the corresponding discharge for the days selected from the daily-discharge table, and plot the values on cross-section paper. The last points plotted will define the rating curve used and will lie among the plotted discharge measurements. After drawing the rating curve, a table can be developed by scaling off the discharge in second-feet for each tenth foot of gage height. These values should be so adjusted that the first differences shall always be increasing or constant, except for known conditions of backwater.

The table of daily discharge gives the discharge in second-feet corresponding to the observed gage heights as determined from the rating tables.

In the table of monthly discharge the column headed "Maximum" gives the mean flow, as determined from the rating table, for the day when the mean gage height was highest. As the gage height is the assumed mean for the day, it does not indicate correctly the stage when the water-surface was at crest height and the corresponding discharge was consequently larger than given in the maximum column. Likewise, in the column headed "Minimum," the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" is the average flow in cubic feet for each second during the month. On this the computations for the remaining columns are based.

---

* Where gage heights are not published, copies can be had upon application to the State Engineer or United States Geological Survey, Albany, N. Y.

The base data presented in this report, unless otherwise stated in description of station, have been collected by the methods commonly used at current-meter gaging stations and described in standard text books.

ACCURACY AND RELIABILITY OF DATA

The accuracy of stream-flow data depends primarily on the natural conditions at the gaging station and on the methods and care with which the data are collected. Errors of the first group depend upon the degree of permanency of channel and of permanency of the relation between discharge and stage. Errors of the second class are due, first, to errors in observation of stage; second, to errors in measurements of flow; and third, to errors due to misinterpretation of stage and flow data.

Even though the monthly means for any station may represent with a high degree of accuracy the quantity of water flowing past the gage, the figures showing discharge per square mile and depth of run-off in inches may be subject to errors which result from including in the measured drainage area some noncontributing districts or omitting estimates of water diverted for municipal supplies or other purposes, and they should, therefore be considered as only approximate, particularly for winter periods or low water. For these errors it is as a rule not feasible to make adequate correction.

The table of monthly discharge is so arranged as to give a general idea of the flow at the station, but should be used only for preliminary estimates. The computations of daily discharge allow more detailed studies of the variation in flow by which the period of deficiency may be determined.

It should be borne in mind that the observations in each succeeding year may be expected to throw new light on data already collected and published, and the engineer who makes use of the figures presented in this report should familiarize himself with the conditions under which they were collected before attempting to draw conclusions for periods other than those covered by the data.

HYDRAULIC DATA

Definition of Terms

Barge canal datum is sea-level (mean tide) at Governor's Island, which has been taken as 14.73 feet below the "Grist-mill" bench-mark in Greenbush (now Rensselaer). This bench-mark was established by the United States Coast and Geodetic Survey in 1857 and is described as a cross cut in the face of the cellar wall of an old grist-mill at Greenbush, opposite Albany. This structure was replaced about 1905 by an office building on the same foundation and is now owned by the Cornell Steamboat Company. The elevations given herein, unless otherwise noted, are feet above Barge canal datum, indicated as (B. C. datum), which is the datum used in the construction of the Barge canal by the State of New York.

The United States Engineer Department uses in its work on the Hudson river and Lake Champlain two datum planes. All elevations south, or downstream from and exclusive of the new Federal dam at Troy (1,400 feet north of the old State dam) are referred to an assumed plane of **lowest low water** in the Hudson river at this locality, indicated as (L. L. W.), which is 2.0 feet below the mean sea-level at Sandy Hook, N. J., or 15.863 feet below the elevation of "Greenbush" bench-mark as published in the Annual Report of the United States Coast and Geodetic Survey for 1903, Appendix No. 3. This plane of lowest low water (L. L. W.) is 1.13 feet below Barge canal datum. To reduce lowest low water (L. L. W.) elevations to Barge canal datum (B. C. datum), subtract 1.13 feet.

All elevations used by the United States Engineer Department in connection with the new Federal dam at Troy and north thereof are referred to mean sea-level at Sandy Hook, N. J., indicated as (M. S. L.). Mean sea-level (M. S. L.) at Albany is 0.87 foot above Barge canal datum (B. C. datum), but on Lake Champlain mean sea-level (M. S. L.) is only 0.81 foot above Barge canal datum (B. C. datum).

Elevations (M. S. L.) at Albany + 0.87 foot = Elevations (B. C. datum).

Elevations (M. S. L.) on Lake Champlain + 0.81 foot = Elevations (B. C. datum).

The volume of water flowing in a stream — the "run-off" or "discharge" — is expressed in various terms, each of which has become associated more or less definitely with a certain class of work. These terms may be divided into two groups — (1) those which represent a rate of flow, as "second-feet," "gallons per minute," "gallons per 24 hours," "miner's inches" and "run-off in second-feet per square mile," and (2) those which represent the actual quantity of water, as "run-off in depth in inches," "million gallons," "cubic feet," and "acre-feet." The units used in this report are "second-feet," "second-feet per square mile," "run-off depth in inches" and "million gallons." They may be defined as follows:

"**Second-foot**" is an abbreviation for cubic foot per second and represents the rate of discharge of water flowing in a channel one square foot in cross-section at a rate of one foot per second. It is generally adopted as the fundamental unit in the measurement of flowing water and is the "natural" unit, as the foot and second are the units used in making the physical determinations. Other units may be computed from this by the use of factors given in the table of equivalents.

"**Second-feet per square mile**" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

"**Run-off depth in inches**" is the depth to which the drainage area would be covered if all the water flowing from it in a given period were conserved and uniformly distributed over the surface. It is used for comparing run-off with rainfall, which is usually expressed as depth in inches.

CONVENIENT EQUIVALENTS

The following is a list of convenient equivalents for use in hydraulic computations:

Table for converting discharge in second-feet per square mile into run-off in depth in inches over the area

SEC.-FT. PER 1 SQ. MI.	DEPTH IN INCHES FOR PERIODS INDICATED							Sec.-ft. per sq. mi.
	1 day	28 days	29 days	30 days	31 days	365 days	366 days	
1	0.037190	1.041322	1.078512	1.115702	1.152893	13.574380	13.611570	1
2	.074380	2.082645	2.157025	2.231405	2.305785	27.148760	27.223140	2
3	.111570	3.123967	3.235537	3.347107	3.458678	40.723140	40.834711	3
4	.148760	4.165289	4.314050	4.462810	4.611570	54.297521	54.446281	4
5	.185950	5.206612	5.392562	5.578512	5.764463	67.871901	68.057851	5
6	.223140	6.247934	6.471074	6.694215	6.917355	81.446281	81.669421	6
7	.260331	7.289256	7.549587	7.809917	8.070248	95.020661	95.280992	7
8	.297521	8.330579	8.628099	8.925620	9.223140	108.595041	108.892562	8
9	.334711	9.371901	9.706612	10.041322	10.376033	122.169421	122.504132	9

NOTE.— For partial month, multiply the values for one day by the number of days.

1 second-foot equals 7.49 United States gallons per second; equals 448.8 gallons per minute; equals 646,317 gallons for one day.

1 second-foot for one year covers 1 square mile 1.131 feet, or 13.572 inches, deep.

1 second-foot for one year equals 31,536,000 cubic feet.

1 second-foot for one day equals 86,400 cubic feet.

1,000,000,000 (1 United States billion) cubic feet equals 11,570 second-feet for 1 day.

1,000,000,000 cubic feet equals 414 second-feet for one 28-day month.

1,000,000,000 cubic feet equals 399 second-feet for one 29-day month.

1,000,000,000 cubic feet equals 386 second-feet for one 30-day month.

1,000,000,000 cubic feet equals 373 second-feet for one 31-day month.

1,000,000 United States gallons per day equals 1.55 second-feet.

100 United States gallons per minute equals 0.223 second-foot.

1 inch deep on 1 square mile equals 2,323,200 cubic feet.

1 inch deep on 1 square mile equals 0.0737 second-foot per year.

1 foot equals 0.3048 meter.

1 mile equals 1.60935 kilometers.

1 mile equals 5,280 feet.

1 acre equals 0.4047 hectare.

1 acre equals 43,560 square feet.

1 acre equals 209 feet square, nearly.

1 square mile equals 2.59 square kilometers.

1 cubic foot equals 0.0283 cubic meter.

1 cubic foot of water weighs 62.5 pounds.

1 cubic meter per minute equals 0.5886 second-foot.

1 horse-power equals 550 foot-pounds per second.

1 horse-power equals 76.0 kilogram-meters per second.

1 horse-power equals 746 watts.

1 horse-power equals 1 second-foot falling 8.80 feet.

1⅓ horse-power equals about 1 kilowatt.

To calculate water-power quickly: $\frac{\text{Sec.-ft.} \times \text{fall in feet}}{11}$ = net horse-power on water-wheel realizing 80 per cent of theoretical power.

ST. LAWRENCE RIVER DRAINAGE

GENERAL FEATURES

The surface waters of an area of 565,000 square miles in extent pass to the ocean by way of St. Lawrence river. In form this area is an irregular parallelogram extending southwestward for about 900 miles with a fairly uniform breadth of 250 miles. The Great Lakes, into which the river expands, have a water-surface of 95,600 square miles, leaving for the land surface drained by the river about 470,000 square miles. More than eight-tenths of this area belongs to Canada. The remainder constitutes a part of the United States. With the exception of about 50,000 square miles (including the whole of the Gaspe Peninsula) in the eastern part of the Province, the Canadian portion lies wholly on the north side of the river. The only part of the United States lying north of the river is at the west end of Lake Superior.

At its mouth the river and its tributaries are drowned, so that the salt water of the ocean enters to form the broad bay of St. Lawrence, with its irregular margin, and even beyond the bay there is indication of a river valley carved in the continental shelf completely covered by the ocean waters. Upstream from the bay of St. Lawrence the water area narrows and the water freshens, though the tide rises nearly as far as Montreal, where the St. Lawrence is a very broad river with gentle current. Just above Montreal the river becomes a series of violent rapids, and from this point upstream it consists of stretches of quiet water separated by rapids. At the outlet of Lake Ontario the river passes through a maze of islands, beyond which is Lake Ontario — the lowest of the five Great Lakes.

The lakes are connected by broad rivers and straits, which in places are navigable, are elsewhere interrupted by rapids and in one place are broken by one of the great falls of the world — Niagara. To the entire area above the mouth of Lake Ontario no large river is tributary. In places the divide runs close to the lakes and is nowhere far from them.

In the northwestern part of the state of New York, between Niagara and St. Lawrence rivers, is an area aggregating 12,400 square miles drained by streams which flow into Lake Ontario. The divide which controls this drainage is very irregular. Extending to the south and southeast from Fort Niagara, it passes around the headwaters of the Genesee a short distance into Pennsylvania; thence reëntering New York it turns southward and eastward taking in the finger lake region, turns to the north, encircles the sources of Black river, turns again to the west and descends to the lake. The country thus included is level or gently undulating in the counties bordering the lake, but farther south it becomes more rolling and a series of ridges, gradually increasing in height, stretch down between Cayuga and Seneca and their companion lakes, finally becoming merged with the elevated, broken country forming the principal divide whose abrupt slopes reach altitudes of 2,000 to 2,500 feet above the headwaters of the Genesee. The easterly or Black river lobe of the drainage basin receives the run-off from the southwestern slope of the Adirondack mountains — largely a rugged and forest-covered area receiving heavy precipitation, especially in the winter. The principal streams of the area are Genesee, Oswego (formed by the union of Seneca and Oneida rivers, which drain the chain of lakes in central New York), Salmon and Black rivers. A small area in the western part of the state is drained by Lake Erie.

St. Lawrence river receives the flow of a number of New York streams having their sources in a northerly slope of the Adirondacks and fed by the numerous lakes with which the region is dotted. Some of these rivers, as the Grass, Raquette and St. Regis, lie entirely within the United States; others, notably Salmon, Trout, Chateaugay and English rivers, cross the international boundary and flow northward into the St. Lawrence in Canada, as does also Richelieu river, the outlet of Laks Champlain. The following table gives a list of the principal tributaries of the St Lawrence in the United States, with the areas drained by them, determined chiefly from Bien's Atlas of the state of New York.

Drainage areas of ST. LAWRENCE RIVER TRIBUTARIES in the United States

	Square miles		Square miles
Oswegatchie river	1,609	Salmon river [a]	273
Grass river	637	Trout river [b]	129
Raquette river	1,219	Chateaugay river [b]	199
St. Regis river	910	English river [b]	53
Little Salmon river [a]	103	Lake Champlain [c]	7,867

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[a] Above junction near international boundary. [b] At New York state line. [c] Above outlet.

The St. Lawrence drains, through Lake Champlain, an area of nearly 4,560 square miles in the state of Vermont. This drainage is practically all from Missisquoi, Lamoille and Winooski rivers and Otto creek. Clyde, Barton and Black rivers, in northern Vermont, are tributary to St. Lawrence river through Lake Memphremagog and St. Francis river.

NIAGARA RIVER DRAINAGE

GENERAL FEATURES

Niagara river connects Lakes Erie and Ontario. It receives the drainage from Tonawanda creek and adjacent smaller areas in New York.

NIAGARA RIVER

NIAGARA RIVER AT TONAWANDA CREEK, TONAWANDA

This station, established by this Department, January 23, 1905, is located on Tonawanda creek about 400 feet above its junction with Niagara river and 1,100 feet below the State dam, at the New York Central railroad drawbridge. A staff gage was used until April 8, 1908, when a Friez automatic gage, making a seven-day graph, was installed just below the bridge and has been used since, being checked by weekly readings on the staff gage. The automatic gage has a range of eight feet, between elevations 565.0 and 573.0.

On December 1, 1916, a standard Type A gage, No. 221, in two sections, having a range of eight feet, was erected on the back of the easterly abutment of the drawbridge, to replace the old gage, the lower section reading from 563.0 to 567.0 and the upper section from 567.0 to 571.0. A standard bench-mark plug was set in the rear face of the abutment close to the gage at elevation 571.0 (B. C. datum). Mean daily water-surface has been taken from the graph to the nearest tenth of a foot.

Daily elevation of water-surface (B. C. datum) of NIAGARA RIVER AT TONAWANDA CREEK, TONAWANDA, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	568.1	568.0	567.7	567.6	567.8	567.6	567.4	567.6	566.4	566.9	566.8	*p*
2.....	568.3	568.1	567.7	567.5	567.8	567.4	567.4	567.4	566.6	566.9	566.9	*p*
3.....	568.0	568.0	567.6	567.7	567.9	567.4	567.6	567.8	566.4	566.5	566.7	*p*
4.....	568.0	567.7	567.6	567.5	567.3	567.3	*s*	567.6	566.4	566.8	566.7	*p*
5.....	567.9	567.8	567.7	567.6	567.4	567.4	*s*	567.1	566.4	566.8	566.7	*p*
6.....	567.8	567.8	567.9	567.5	567.5	567.0	566.6	567.1	566.4	566.7	566.8	*p*
7.....	567.9	567.5	567.4	567.7	567.4	566.8	566.9	566.7	566.4	566.6	566.9	*p*
8.....	568.1	567.9	567.4	567.5	567.5	567.8	567.3	566.7	566.4	566.7	566.9	567.1
9.....	568.1	567.9	567.7	567.2	567.6	569.9	567.2	566.7	566.5	566.4	566.7	567.1
10.....	568.2	567.8	567.6	567.0	567.6	569.0	567.1	567.0	566.7	565.4	567.2	566.9
11.....	568.2	567.8	567.7	567.2	567.5	567.7	566.7	566.7	566.9	566.0	566.7	567.0
12.....	568.2	567.8	567.8	*s*	567.3	567.3	568.1	566.7	566.7	*s*	566.8	567.5
13.....	568.2	567.8	567.5	*s*	*r*	567.1	568.8	566.7	566.4	*s*	566.9	567.3
14.....	568.0	567.9	567.5	567.5	*r*	567.7	567.9	*p*	566.7	566.8	566.9	567.2
15.....	568.2	567.8	567.5	567.7	*r*	567.6	568.0	*p*	566.9	566.8	566.7	567.1
16.....	568.0	567.9	567.3	567.4	567.4	567.2	568.3	*p*	567.6	566.7	566.8	567.1
17.....	568.0	567.9	567.4	566.9	567.5	567.4	568.2	567.2	567.4	*s*	566.8	567.1
18.....	568.0	567.8	567.6	567.2	567.5	567.3	567.8	567.2	567.0	*s*	566.9	567.0
19.....	568.1	567.9	567.7	567.8	567.4	567.1	567.7	567.0	567.0	*s*	567.0	567.0
20.....	568.0	567.9	567.6	*s*	567.6	567.2	567.9	567.6	567.0	*s*	567.0	566.8
21.....	568.0	567.6	567.5	567.4	567.3	567.1	567.9	567.4	567.0	566.6	566.9	567.2
22.....	568.1	567.5	567.2	567.4	567.3	567.0	568.0	567.5	567.0	*r*	566.9	567.3
23.....	568.0	567.6	567.3	567.0	567.1	567.2	567.8	567.4	566.8	*r*	567.0	567.2
24.....	567.9	568.2	567.4	566.8	567.4	567.2	567.6	567.0	566.7	567.0	566.9	567.0
25.....	567.9	568.2	567.4	567.7	567.3	567.4	567.5	567.0	567.0	566.6	567.0	566.9
26.....	568.0	567.9	567.4	567.5	567.2	567.4	567.3	567.6	567.0	566.4	567.0	566.8
27.....	568.1	567.8	567.5	567.9	567.1	567.6	567.3	566.8	566.9	566.6	567.2	566.9
28.....	568.0	567.7	567.7	567.9	567.4	567.7	567.4	566.4	566.8	566.5	567.1	567.0
29.....	568.3	567.6	567.8	567.4	567.1	567.1	568.2	......	566.9	566.7	567.0	567.0
30.....	568.2	567.5	568.0	569.0	567.2	567.1	567.7	......	566.9	566.7	567.0	566.9
31.....	568.1	567.5	......	568.0	......	567.1	567.8	......	566.8	......	567.1	......

s Clock stopped. *r* Clock being repaired. *p* Pen failed to record.

CATTARAUGUS CREEK

DESCRIPTION

Cattaraugus creek rises in the southwestern part of Wyoming county and flows in a westerly direction, entering Lake Erie about 25 miles southwest of Buffalo, on the boundary line between Erie and Chautauqua counties. The stream is about 55 miles long and drains an area of approximately 560 square miles above the mouth. A large portion of its course forms the boundary between Erie and Chautauqua counties. Its headwaters rise at an elevation of between 1,900 and 2,000 feet. The drainage basin is hilly, fairly well timbered and rather narrow. There are few tributary streams, those of most importance entering the river from the south.

South branch of Cattaraugus creek, which is the largest tributary, enters at a point about two miles above Gowanda. There is a dam at Gowanda, which is used for developing electric power and also for running a local grist-mill.

CATTARAUGUS CREEK AT VERSAILLES

Location.—At the three-span highway bridge in the village of Versailles, Cattaraugus county, 2¼ miles above the mouth of Clear creek, about 6 miles below Gowanda and about 8 miles above the mouth of the stream.

Drainage area.— 467 square miles. (Measured on post-route map.)

Records available.— September 23, 1910, to June 30, 1918.

Gage.— Chain, on upstream side of right span of bridge; read by Charles Wilson.

Discharge measurements.— Made from the downstream side of bridge or by wading.

Channel and control.— Rock and gravel; shifting.

Extremes of discharge.— Current year: Maximum stage recorded during year, 12.0 feet at 8 A. M., February 23; stage-discharge relation affected by ice, discharge not computed. Minimum stage recorded, 4.6 feet at 7 A. M. to 4 P. M., September 27; discharge, 105 second-feet.

1910–1918: Maximum discharge recorded, roughly 30,000 second-feet at 5:40 P. M., March 25, 1913; gage height, 11.6 feet. Minimum stage recorded, 4.65 feet, August 21 and September 6 and 7, 1913; discharge, 55 second-feet.

Ice.— Stage-discharge relation seriously affected by ice.

Accuracy.— Stage-discharge relation not permanent. Affected by ice during large portion of the period from December to March, inclusive. Gage read to half-tenths twice daily. Daily discharge throughout the year ascertained by indirect method of applying mean daily effective gage heights to rating table. Effective gage heights determined from discharge measurements. Results fair.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of CATTARAUGUS CREEK AT VERSAILLES, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
		Feet	*Sec.-ft.*
1917			
July 13	C. S. DeGolyer	5.24	555
Aug. 31	J. W. Moulton	4.83	239
Aug. 31	J. W. Moulton	4.82	231
1918			
Jan. 22 *a*	E. D. Burchard	6.43	232
Mar. 1	E. D. Burchard	6.18	1,950
May 29	E. D. Burchard	4.99	333
May 29	E. D. Burchard	4.99	347

a Measurement made under complete ice cover.

Daily discharge, in second-feet, of CATTARAUGUS CREEK AT VERSAILLES, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	592	310	200	190	1,900	1,400	380	220	1,800	480	300	280
2	738	551	180	170	1,500	1,000	340	220	1,100	650	280	240
3	522	325	625	190	1,300	650	340	220	1,500	550	240	200
4	430	234	297	1,600	1,100	600	360	220	950	500	240	200
5	386	200	200	1,200	1,000	500	360	220	2,400	460	240	200
6	371	189	200	1,000	900	480	340	220	4,000	400	240	220
7	310	180	278	800	900	420	320	220	1,800	380	280	200
8	493	166	920	380	750	280	320	220	1,000	380	380	200
9	551	166	551	380	700	280	320	380	1,200	420	280	170
10	456	166	386	340	700	320	320	1,500	2,000	340	320	200
11	1,350	180	245	280	650	380	320	3,200	1,400	380	500	180
12	920	166	200	300	600	400	320	1,700	1,400	420	380	500
13	570	180	166	500	550	480	320	2,000	3,400	420	460	440
14	3,570	200	166	850	500	550	300	2,200	16,000	900	700	320
15	2,020	189	166	900	500	550	300	2,600	4,000	800	400	260
16	1,270	189	143	1,100	550	600	260	1,500	1,400	600	300	200
17	658	189	143	650	550	650	260	1,000	1,200	480	300	200
18	551	166	143	420	500	750	240	800	1,200	800	280	200
19	493	166	143	1,100	550	850	240	900	1,100	600	240	170
20	430	143	325	2,100	500	1,200	240	2,600	1,400	460	1,000	160
21	456	143	258	900	480	2,400	240	1,500	1,400	400	550	160
22	430	143	258	700	550	2,200	240	2,200	1,200	550	340	340
23	430	200	200	650	750	1,500	240	4,400	950	600	900	420
24	371	217	166	1,600	650	1,500	240	4,400	750	550	440	300
25	348	217	152	3,600	500	3,400	240	3,900	700	500	340	240
26	278	180	143	2,800	500	1,700	240	7,000	600	400	950	180
27	348	166	124	5,500	380	1,000	240	2,000	600	380	650	180
28	297	166	152	6,000	350	800	220	1,800	600	320	420	160
29	1,190	551	166	8,500	500	550	220	......	550	300	300	170
30	795	474	180	10,000	550	500	220	......	550	300	300	180
31	456	217	......	3,400	......	440	220	......	500	......	280	......
Mean	712	223	249	1,870	720	914	282	1,760	1,890	491	414	236

NOTE.— Discharge, December 10 to February 25, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of CATTARAUGUS CREEK AT VERSAILLES, for the year ended June 30, 1918

[Drainage area, 467 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	3,570	278	712	1.52	1.75
August	551	143	223	0.478	0.55
September	920	124	249	0.532	0.59
October	10,000	170	1,870	4.00	4.61
November	1,900	380	720	1.54	1.72
December	3,400	280	914	1.96	2.26
January	380	220	282	0.631	0.73
February	4,400	220	1,760	3.78	3.94
March	16,000	500	1,890	4.05	4.67
April	900	300	491	1.05	1.17
May	1,000	240	414	0.877	1.01
June	500	160	236	0.505	0.56
The year	16,000	124	811	1.74	23.56

TONAWANDA CREEK

DESCRIPTION

Tonawanda creek rises in Wyoming county and flows northward into Genesee county. At Batavia it turns abruptly to the west and continues in that direction until it reaches the Niagara river at Tonawanda. After passing out of Genesee county it forms the boundary between Niagara county and Erie county.

Tonawanda creek rises in a rather hilly country and, in the upper part of its basin, flows through a rather narrow valley. Its main tributary is Little Tonawanda creek, which flows into the stream from the right about 3 miles south of Batavia.

Between Pendleton and Tonawanda the creek and the Erie canal are coincident, the creek leaving the canal over the State dam at Tonawanda. Water for canal purposes is passed eastward in the canal from Tonawanda creek and Lake Erie.

ERIE CANAL AT CHANGE BRIDGE, PENDLETON

This station is located at change bridge over the Erie canal at its junction with Tonawanda creek about ½ mile southwest of

Pendleton. The gage is a staff secured to a pile under the old tow-path bridge. It is read once daily — at 5 P. M.

Daily elevation of water-surface (B. C. datum) of ERIE CANAL AT CHANGE BRIDGE PENDLETON, for the year ended June 30, 1918. Homer Snell, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	571.9	570.9	571.1	570.8	572.9	571.5	569.5	568.6	569.0	566.8	566.7	567.0
2.....	571.6	571.0	571.3	570.6	571.9	571.5	569.4	568.7	568.2	567.0	567.4	566.8
3.....	571.6	571.0	571.2	570.7	571.15	571.3	569.3	568.7	568.0	566.5	566.5	566.9
4.....	571.55	571.0	571.3	570.6	571.2	570.3	569.25	568.7	567.8	566.8	566.4	566.5
5.....	571.1	571.0	571.2	570.6	570.7	570.2	569.2	568.7	568.5	566.9	566.5	566.5
6.....	571.0	571.0	571.1	570.5	570.7	570.15	569.2	568.6	568.4	566.2	566.5	566.4
7.....	571.0	570.8	570.8	570.5	570.7	570.0	569.25	568.7	568.0	566.6	566.5	566.9
8.....	571.8	570.9	570.9	570.5	570.8	569.6	569.45	568.4	568.0	566.6	566.1	566.65
9.....	571.6	571.0	571.1	570.5	571.0	570.0	569.5	568.5	567.8	565.7	566.1	566.65
10.....	571.7	570.8	571.0	570.5	571.0	570.0	569.5	568.6	567.9	565.0	567.0	566.4
11.....	571.8	570.8	571.0	570.0	570.9	570.0	569.5	569.5	567.5	565.8	566.3	566.5
12.....	571.7	570.85	571.0	570.2	570.7	570.0	570.0	570.0	567.8	566.0	566.5	566.3
13.....	571.6	570.8	570.9	570.95	570.6	570.0	570.0	572.0	570.0	566.6	566.6	566.5
14.....	571.1	570.9	570.5	571.0	570.7	569.9	568.9	573.5	573.8	566.7	566.6	566.9
15.....	571.3	570.9	570.4	570.9	570.5	569.7	568.8	576.3	573.1	566.7	566.3	566.8
16.....	571.2	570.8	570.85	571.0	570.5	569.6	568.7	573.0	572.9	566.6	566.3	566.7
17.....	571.1	570.7	570.75	570.9	570.6	569.6	568.6	572.3	573.9	566.6	566.2	566.3
18.....	571.3	570.5	570.8	570.8	570.6	569.5	568.7	571.2	572.0	568.2	566.2	566.3
19.....	571.3	570.7	570.7	571.2	570.5	569.5	568.6	570.0	571.1	567.5	566.4	566.2
20.....	571.3	570.6	570.6	571.5	571.0	569.7	568.6	574.0	570.5	566.9	566.6	566.0
21.....	571.3	570.7	570.6	571.7	570.9	570.0	569.0	571.0	569.5	566.8	566.0	566.75
22.....	571.3	570.7	570.5	571.3	571.4	570.2	569.6	570.5	567.9	567.7	566.3	566.9
23.....	571.2	570.75	570.6	571.1	571.5	570.7	569.6	570.0	567.2	566.8	566.5	566.9
24.....	571.1	570.8	570.5	571.2	571.6	570.8	569.5	569.0	567.0	566.9	566.4	566.5
25.....	571.0	570.8	570.5	572.2	571.5	571.2	569.4	568.8	567.2	566.4	566.5	566.2
26.....	571.0	571.0	570.5	572.5	571.0	571.2	569.3	571.0	566.8	566.4	566.75	566.4
27.....	570.8	571.0	570.5	572.3	570.6	571.0	569.2	570.3	566.8	566.4	566.6	566.3
28.....	570.8	570.8	570.6	572.2	571.0	570.6	568.6	570.0	566.8	566.8	566.5	566.35
29.....	571.0	570.7	570.6	572.5	570.8	570.1	568.6	......	566.9	566.6	566.5	566.5
30.....	571.0	570.8	570.8	574.1	571.1	570.0	568.8	......	566.9	566.6	566.5	566.0
31.....	571.0	570.9	......	573.6	......	569.9	568.7	......	566.9	......	566.6	......

ERIE CANAL ABOVE STATE DAM, TONAWANDA

This station is located just above the State dam over which Tonawanda creek leaves the Erie canal at North Tonawanda.

A staff gage secured to docking near the middle pier of the Main–Delaware street bridge, established January 23, 1905, was used until December 18, 1916, when a new standard Type A gage, No. 220, in two sections, having a range of 15½ feet, was established at the mouth of Ellicott creek about 300 feet west of the old gage. The lower section, from elevation 561.0 to 573.0, is secured to the end of the retaining wall along Tonawanda creek near the easterly end of East Niagara street bridge over Ellicott creek and the upper section, from elevation 572.5 to 576.5, is secured to the pier at the easterly end of the same bridge. A standard bench-mark plug was placed in the side of the pier at elevation 576.0 (B. C. datum). The State dam having been removed, this station was abandoned March 31, 1918, practically the same data being obtained from the automatic gage on "Niagara River at Tonawanda Creek, Tonawanda."

The gage was not read on Sundays, was read once on Saturdays and twice on other week days — at 8:30 A. M. and 4:30 to 5:00 P. M.

Daily elevation of water-surface (B. C. datum) of ERIE CANAL ABOVE STATE DAM AT TONAWANDA, for the year ended June 30, 1918. Wm. A. Brick, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	......	571.07	571.10	570.55	572.60	571.35	569.60	568.82	567.55
2	571.85	571.00	......	570.50	572.10	......	569.55	568.90	567.20
3	571.68	570.88	571.13	570.56	571.50	571.22	569.39	......	......
4	*a*	570.35	571.12	570.48	......	570.58	569.38	569.08	566.91
5	571.35	......	571.08	570.52	571.06	570.15	569.36	569.00	567.30
6	571.22	570.80	571.02	570.70	570.78	569.95	......	568.85	567.40
7	571.14	570.80	571.00	......	570.60	569.65	569.2	568.70	567.24
8	......	570.85	571.00	571.04	570.60	569.55	569.65	568.52	567.05
9	571.65	570.78	......	570.80	571.05	......	569.68	568.55	566.80
10	571.5	570.72	571.18	570.50	571.10	570.20	569.75	......	......
11	572.00	570.80	571.10	570.30	......	569.70	569.55	568.95	567.48
12	572.05	......	571.02	570.68	570.90	569.55	569.75	569.62	567.55
13	571.71	571.00	570.95	570.95	570.60	569.69	......	571.05	567.60
14	571.32	570.90	571.31	......	570.68	569.64	569.06	571.05	569.35
15	......	570.80	570.40	570.98	570.72	569.70	568.80	571.92	569.05
16	571.44	570.80	......	571.04	570.39	......	568.80	570.35	569.00
17	571.38	570.90	570.98	570.84	570.33	569.62	568.78	......	......
18	571.4	570.75	570.88	570.96	......	569.52	568.90	568.32	567.75
19	571.2	......	570.68	571.22	570.49	569.55	569.08	567.85	567.55
20	571.2	570.90	570.70	571.58	570.80	569.72	......	570.72	567.55
21	571.2	570.70	570.70	......	571.48	569.88	569.82	569.50	567.55
22	......	570.70	570.70	571.42	571.45	570.05	569.80	568.60	567.35
23	571.12	571.46	......	571.22	571.50	......	569.65	568.20	567.00
24	570.92	571.00	570.54	571.14	571.60	570.88	569.50	......	......
25	570.94	571.00	570.69	572.30	......	571.22	569.55	567.25	567.00
26	570.9	......	570.71	572.65	571.00	571.18	569.50	569.50	567.00
27	570.8	571.00	570.65	572.50	570.90	571.08	......	568.50	567.00
28	570.8	570.90	570.76	......	570.88	570.95	569.02	568.00	567.00
29	......	570.80	570.85	572.22	570.64	570.30	569.15	......	567.00
30	570.9	570.92	......	573.42	570.82	......	569.10	......	567.00
31	570.9	570.98	......	573.25	......	569.80	568.90	......	......

NOTE.— Gage abandoned March 31. *a* No record.

LITTLE TONAWANDA CREEK

LITTLE TONAWANDA CREEK AT LINDEN

Location.—At the stone arch highway bridge in the village of Linden, Genesee county, about 3 miles above the junction with Tonawanda creek.

Drainage area.— 22 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— July 8, 1912, to June 30, 1918.

Gage.— Vertical staff, on right upstream abutment of bridge. Lower 2 feet of enameled iron, graduated to hundredths of a foot; upper 4 feet of bronze graduated to half-tenths; read by C. L. Schenck.

Discharge measurements.— High-water measurements made from a cable 1,000 feet above gage; low-water measurements made by wading near gage.

Channel and control.—A standard Francis weir, 2.01 feet long and 8 inches high, has been constructed under the upstream side of the bridge. When the water overtops this weir it flows over a 2-inch plank about 13 feet long, including the 2 feet of weir. During the winter of 1916–1917 the crest of the weir was worn down by ice passing over it. The crest plank was replaced August 20 and the weir restored to its original condition. The weir was entirely destroyed by ice February 20, 1918, and has not been replaced. The section of the channel which forms the control since the destruction of the weir is of coarse gravel and boulders and is probably permanent between dates of shift.

Extremes of discharge.— Current year: Maximum stage recorded during year, 7.45 feet at 8 P. M., February 19; discharge not computed on account of ice lodged on weir. Minimum stage recorded, 0.38 foot at 8 A. M., September 27 and October 3; discharge, 1.39 second-feet.

1912–1918: Maximum stage, 14.6 feet during the flood of April 22, 1916, determined by leveling from flood marks; discharge, about 2,400 second-feet. Minimum stage recorded, 0.18 foot, August 20 and 21, September 14 to 16, inclusive, and October 8, 1913; discharge, 0.43 second-foot.

Accuracy.— Stage-discharge relation permanent between dates of shift. Rating curve for weir in good condition, well defined up to 250 second-feet and fairly well defined between 250 and 750 second-feet. Rating curve used February 21 to June 30; fairly well defined up to 200 second-feet. Daily discharge ascertained by applying mean daily gage height to rating table. Results good when weir was in good condition and fairly good for the remainder of the year.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of LITTLE TONAWANDA CREEK AT LINDEN, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
July 14	C. S. DeGolyer	[a] 1.10	24.9
July 14	C. S. DeGolyer	[a] 1.06	23.4
Aug. 21	C. S. DeGolyer	[b] 0.44	1.54
Aug. 21	C. S. DeGolyer	[b] 0.44	1.58
Sept. 1	J. W. Moulton	0.64	2.9
Sept. 1	J. W. Moulton	0.62	2.9
Sept. 1	J. W. Moulton	0.62	2.8
1918			
Mar. 4	E. D. Burchard	0.26	41.0
Mar. 19	E. D. Burchard	0.86	106
Mar. 19	E. D. Burchard	0.94	116
Mar. 19	E. D. Burchard	1.02	128
Mar. 19	E. D. Burchard	1.12	140
Mar. 19	E. D. Burchard	1.18	147
May 31	E. D. Burchard	—0.24	6.8
May 31	E. D. Burchard	—0.24	6.8

[a] Portion of tree lodged against weir. [b] Obstruction removed and weir repaired.

NOTE.— Weir carried away by ice February 20 and not replaced.

Daily discharge, in second-feet, of LITTLE TONAWANDA CREEK AT LINDEN, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	84	3.9	3.21	1.51	51	43	9.0	4.2	83	25	9.2	5.9
2.....	74	3.5	3.36	1.45	41	21	8.4	4.6	105	43	8.7	4.7
3.....	33	3.22	4.6	1.51	84	12	7.8	3.6	52	25	8.2	4.0
4.....	23	3.22	2.93	2.25	27	11	7.2	3.6	38	18	7.8	3.8
5.....	19	2.9	2.38	2.86	24	10	6.6	3.48	79	15	7.4	3.8
6.....	15	2.78	2.18	3.28	21	9.7	6.6	3.6	203	14	6.6	5.9
7.....	13	2.66	2.79	2.38	19	8.4	7.2	4.6	50	13	7.4	7.4
8.....	32	2.54	4.6	2.12	16	8.7	6.6	5.1	56	16	8.2	5.1
9.....	22	2.54	4.2	2.25	16	6.1	6.6	6.1	32	14	7.0	4.3
10.....	74	2.42	3.07	2.18	15	7.2	6.6	9.7	158	13	22	5.1
11.....	29	2.2	2.65	2.12	13	9.0	7.2	25	77	14	17	4.3
12.....	36	2.2	2.65	2.32	13	9.0	7.8	......	585	15	14	75
13.....	25	2.1	2.12	3.36	12	9.0	6.6	......	203	88	15	21
14.....	24	2.9	2.05	7.8	11	9.0	6.4	......	740	44	12	16
15.....	24	2.3	1.87	8.4	12	9.0	6.1	......	97	25	9.2	11
16.....	18	2.2	1.74	9.7	13	8.1	6.1	......	63	15	8.2	7.4
17.....	16	2.2	1.74	6.1	13	8.1	5.9	......	73	22	7.4	5.9
18.....	20	2.2	1.62	5.6	13	8.1	5.6	......	65	80	6.6	5.1
19.....	16	2.0	1.62	12	13	8.4	5.3	......	110	32	6.2	4.0
20.....	12	1.8	2.05	19	12	13	5.6	......	108	21	5.9	3.8
21.....	10	1.74	1.74	11	12	35	5.6	......	71	21	5.1	4.3
22.....	8.2	1.74	1.51	7.2	17	39	5.1	......	60	25	5.1	8.2
23.....	7.4	1.74	1.51	7.8	18	23	5.1	......	42	19	6.6	7.4
24.....	6.8	1.74	1.45	154	13	37	5.1	......	32	19	5.1	5.9
25.....	6.1	1.74	1.45	164	12	59	4.6	......	30	17	5.9	4.3
26.....	5.6	1.68	1.45	154	11	24	4.9	115	25	14	22	3.8
27.....	5.2	1.51	1.39	135	10	18	4.9	88	21	13	15	3.5
28.....	4.6	1.74	1.99	135	10	13	4.9	46	26	11	10	3.2
29.....	10	3.6	1.51	144	10	12	4.6	......	25	10	7.8	3.0
30.....	5.6	3.21	1.51	288	14	11	4.2	......	26	9.2	8.2	3.0
31.....	4.6	2.65	......	83	......	9.7	4.4	......	25	......	6.6	......
Mean...	22.0	2.42	2.30	44.6	17.2	16.9	6.08	82.0	107	22	9.39	8.34

NOTE.— Mean discharge, February 12 to 25, inclusive, estimated, 141 second-feet, because of ice lodged against weir. Weir carried out by ice February 20.

Monthly discharge of LITTLE TONAWANDA CREEK AT LINDEN, for the year ended June 30, 1918

[Drainage area, 22 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	84	4.6	22.0	1.00	1.15
August	3.9	1.51	2.42	0.110	0.13
September	4.6	1.39	2.30	0.105	0.12
October	288	1.45	44.6	2.03	2.34
November	51	10	17.2	0.782	0.87
December	59	6.1	16.9	0.768	0.86
January	9.0	4.2	6.08	0.277	0.32
February	....	3.48	82	3.73	3.88
March	740	21	107	4.86	5.60
April	80	9.2	22.0	1.00	1.12
May	22	5.1	9.39	0.427	0.49
June	75	3.0	8.34	0.379	0.42
The year	740	1.39	28.0	1.27	17.30

GENESEE RIVER DRAINAGE BASIN

GENESEE RIVER

DESCRIPTION

Genesee river rises in Potter county, Pa., 8 or 10 miles south of the New York–Pennsylvania boundary, flows northwestward for about 32 miles by general course, then turns to the northeast and empties into Lake Ontario, 7 miles north of Rochester. The entire length of the stream, following bends, is about 135 miles and the drainage area is about 2,450 square miles.

In the 39 miles between Belmont, in central Allegany county, and Portage, in southwestern Livingston county, the fall of the water-surface is 253 feet, an average of 6.4 feet per mile. At Portage the river plunges down in three magnificent falls and thence nearly to Mount Morris flows at the bottom of a deep gorge. From Mount Morris to Rochester the valley is broad and open and the stream is bordered by meadows subject to occasional overflow. At Rochester there is another abrupt descent over three heavy falls, amounting to about 260 feet within the city.

In the northern counties the surface is rolling, with long, easy slopes, except along the streams, which usually lie in deep ravines, hemmed in by steep banks. On the whole there is a gradual rise away from the lakes and in the upper half of the basin the country becomes rough and is broken by ridges, the summits of which attain elevations of from 2,000 to 2,500 feet above tide.

Precipitation is rather low, the average rainfall being about 35 inches, some 14 inches smaller than that of the upper Sacandaga.

Above all the private dams at Rochester the State formerly maintained a dam for diverting water to the Erie canal, and in the basin of Black creek, one of the upper tributaries of the Genesee from the west, are two reservoirs (Rockville and Cuba reservoirs), owned by the State, also used for the benefit of the Erie canal.

Cuba reservoir, on the Genesee–Allegheny divide, receives the drainage from a tributary area of 26.6 square miles. The storage volume is 454,000,000 cubic feet. The overflow from this reservoir enters Allegheny river. The storage water may be turned into the summit level of the abandoned Genesee Valley canal and thence into Genesee river.

The series of remarkable lakes tributary to the Oswego basin is continued westward into the basin of the Genesee and includes Conesus, Hemlock, Canadice, and Honeoye lakes. These lakes serve as natural reservoirs and have inlets draining considerable areas at their upper ends. The slopes adjacent to the lakes themselves are narrow and steep and are drained by gullies and torrential brooks. The area below the lakes is rolling and the soil is rich and extensively cultivated. The areas and elevations of these lakes are shown in the following table:

Areas and elevation of LAKES IN GENESEE RIVER BASIN [a]

LAKE	Elevation	Water-surface area	Drainage area	Per cent, water-surface
	Feet	*Square miles*	*Square miles*	
Hemlock lake	896	2.8	46.8	5.98
Canadice lake	1,092	1.0	12.6	7.94
Honeoye lake	800	2.5	39.6	6.31

[a] These lake basins are shown on the Honeoye, Canandaigua, Naples and Wayland topographic atlas sheets of the United States Geological Survey, from which the area of Honeoye lake has been taken. Areas of Hemlock and Canadice lakes are from surveys of the Rochester water-works.

Drainage areas of tributaries of GENESEE RIVER [a]

NAME OF STREAM	AREA IN SQUARE MILES		
	Tributary	GENESEE RIVER	
		Above tributary	Below tributary
Cryder creek	43.3	99.9	143.2
Chenunda creek	30.0	181.0	211.0
Dyke's creek	68.3	214.0	282.3
Vandemark creek	21.6	301.3	322.9
Knight's creek	22.3	323.9	346.2
Phillips creek	32.3	372.8	405.1
Vancampens creek	55.7	410.4	466.1
Angelica creek	82.1	481.1	563.2
White creek	15.9	569.2	585.1
Black creek (Allegany county)	31.1	595.5	626.6
Crawford creek	11.8	637.6	649.4
Caneadea creek	63.3	651.0	714.3
Cold creek	41.0	745.3	786.3
Rush creek	35.3	787.0	822.3
Wiscoy creek (including East Koy creek)	108.6	833.6	942.2
East Koy creek	59.9	....	....
Wolf creek	19.3	974.9	994.2
Silver lake outlet	30.4	1,029.2	1,059.6
Canaseraga creek, Livingston Co. (including Keshequa creek)	340.7	1,066.4	1,407.1
Keshequa creek (formerly Coshaqua)	82.0	....	....
Beards creek	41.3	1,423.1	1,464.4
Conesus lake outlet	88.8	1,555.5	1,643.9
Honeoye creek	262.6	1,675.9	1,938.5
Allen's creek	198.1	1,947.1	2,145.2
Black creek (Monroe county)	211.8	2,168.5	2,380.0
Genesee river, total at mouth	....	....	2,445.6

[a] From an early report on Genesee river storage, Report of State Engineer, 1890, plate facing p. 422.

GENESEE RIVER AT SCIO

Location.—At the steel highway bridge, 1/4 mile above Vandemark creek, 1/2 mile above the village of Scio, Allegany county, and 1 mile above Knight creek.

Drainage area.— 297 square miles. (Measured on U. S. Geological Survey topographic maps of states of New York and Pennsylvania.)

Records available.— June 12, 1916, to June 30, 1918.

Gage.—Vertical staff, attached to downstream face of left bridge abutment; read by Miss Retta Potter.

Discharge measurements.— Made from the downstream side of the bridge at medium and high stages and by wading at low stages.

Channel and control.— Coarse gravel and probably permanent.

Extremes of discharge.— Current year: Maximum stage recorded during year, 9.0 feet at 8 A. M. on March 14; discharge, about 10,400 second-feet. Minimum stage recorded, 0.74 foot from 2 to 6 P. M., June 21; discharge, 71 second-feet.

1916–1918: Maximum stage recorded, 9.0 feet at 8 A. M., March 14, 1918; discharge, about 10,400 second-feet. Minimum stage recorded, 0.60 foot at 8 A. M., and 6 P. M., August 25 and 26, 1916; discharge, 25 second-feet.

Ice.— Stage-discharge relation affected by ice.

Accuracy.— Stage-discharge relation practically permanent. Affected by ice during a large portion of the period from December to March, inclusive. Rating curve well defined between 25 and 5,500 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good except for periods when the stage-discharge relation is affected by ice, when result are fair.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of GENESEE RIVER AT SCIO, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Dec. 22 [a]	E. D. Burchard	1.83	19
1918			
Jan. 19 [a]	E. D. Burchard	2.05	55
Mar. 5	E. D. Burchard	2.02	[illegible]
May 27	J. W. Moulton	1.61	34
June 21	E. D. Burchard	0.74	74
June 21	E. D. Burchard	0.74	73

[a] Measurement made through complete ice cover.

Daily gage height, in feet, of GENESEE RIVER AT SCIO, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	1.65	1.8	2.35	0.80	2.8	1.55	1.65	......	6.8	1.95	1.95	1.75
2	5.1	1.55	2.6	0.85	4.3	1.45	1.65	......	3.05	1.9	1.95	1.35
3	3.1	1.42	2.2	0.81	3.0	1.35	1.75	......	2.8	2.5	1.95	1.2
4	2.35	1.31	1.75	0.91	2.15	1.20	1.75	......	2.3	2.4	1.95	1.15
5	2.1	1.27	1.6	1.35	1.9	1.15	1.80	......	2.1	2.1	1.95	1.25
6	1.9	1.20	1.5	1.00	1.6	1.15	1.80	......	3.4	2.0	1.95	1.45
7	1.75	1.17	1.42	0.98	1.7	1.25	1.65	......	2.3	1.95	1.95	1.85
8	2.1	0.98	1.44	0.90	1.7	1.15	1.85	......	2.15	2.0	1.95	1.65
9	2.35	1.65	1.39	0.99	1.6	1.25	1.85	......	2.25	2.2	1.95	1.55
10	2.1	1.25	1.27	0.94	1.5	1.30	1.84	3.2	2.35	2.25	1.95	1.55
11	2.45	1.11	1.19	0.90	1.5	1.35	1.82	3.2	2.25	2.4	1.95	1.65
12	2.15	1.00	1.13	1.21	1.40	1.25	1.85	3.2	2.8	2.35	1.9	[illegible]
13	1.85	1.03	1.08	1.45	1.30	1.25	1.85	4.5	3.2	2.3	1.85	[illegible]
14	1.75	3.4	1.01	1.18	1.85	1.30	1.85	3.0	8.8	2.15	1.85	1.5
15	1.65	2.8	0.99	1.55	1.80	1.35	1.90	4.4	4.0	2.3	1.85	1.25
16	1.48	2.15	0.91	1.8	1.25	1.30	1.95	3.0	2.7	3.2	1.85	......
17	1.39	1.85	0.90	1.45	1.30	1.35	1.95	2.8	2.45	3.2	1.85	......
18	1.32	1.6	0.90	1.32	1.20	1.35	2.30	2.6	2.25	3.6	1.85	......
19	2.45	1.42	0.90	3.3	1.35	1.30	1.95	2.25	2.2	3.6	1.85	......
20	2.2	1.31	0.90	4.3	1.10	1.40	1.85	7.8	2.2	3.7	1.85	......
21	1.65	1.24	0.89	2.8	1.15	1.40	1.85	2.6	2.2	3.5	1.85	.76
22	1.41	1.14	0.87	2.4	1.25	1.8	1.85	2.4	2.25	3.3	1.85	1.45
23	1.34	1.47	0.83	2.6	1.30	1.95	1.80	2.3	2.25	2.9	3.0	1.35
24	1.6	1.50	0.80	3.8	1.35	2.5	1.85	2.35	2.25	2.25	2.3	1.3
25	1.55	1.24	0.80	3.8	1.45	2.35	1.80	2.2	2.2	2.2	1.7	1.15
26	1.8	1.20	0.80	3.6	1.45	1.9	......	5.7	2.05	2.0	1.85	1.35
27	1.75	1.11	0.84	5.0	1.5	1.75	......	2.8	2.0	2.0	1.7	1.15
28	1.38	1.02	0.88	5.4	1.45	1.7	......	2.35	2.05	2.0	1.6	1.10
29	3.6	1.06	0.88	4.9	1.5	1.65	......	......	2.0	1.95	1.75	1.10
30	2.8	1.5	0.88	4.5	1.45	1.7	......	......	1.95	1.95	1.75	1.25
31	2.15	1.55	......	3.4	......	1.65	......	......	1.95	......	1.6	......

NOTE.— Stage-discharge relation affected by ice, December 7 to February 13. Observations of gage height, April 27 to May 22 and June 14 to 20, probably inaccurate and discharge estimated for these periods.

Daily discharge, in second-feet, of GENESEE RIVER AT SCIO, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	412	490	815	61	1,150	361	120	46	6,300	572	460	465
2	3,710	361	990	74	2,680	312	100	46	1,360	545	440	279
3	1,400	298	720	64	1,310	265	120	46	1,150	920	360	218
4	815	247	464	91	690	198	95	46	780	850	340	200
5	660	228	386	265	545	178	85	46	660	660	340	238
6	545	198	336	121	386	158	75	46	1,680	600	360	322
7	464	186	298	98	438	180	75	46	780	572	400	518
8	660	114	307	88	438	120	75	46	690	600	360	415
9	815	412	283	118	386	140	70	60	750	720	320	518
10	660	220	229	101	336	140	70	160	815	750	320	518
11	885	162	194	88	336	160	65	380	750	850	320	415
12	690	121	170	202	288	120	70	1,300	1,150	815	500	415
13	518	132	151	312	242	120	65	1,800	1,490	680	650	279
14	464	1,680	125	190	265	140	65	1,310	10,000	690	550	200
15	412	1,150	118	361	242	160	60	2,800	2,380	780	440	150
16	326	690	91	490	220	140	65	1,310	1,070	1,490	340	120
17	283	518	88	312	242	160	60	1,150	885	1,490	300	85
18	251	386	88	251	198	160	150	990	750	1,880	260	60
19	885	298	88	1,580	265	140	55	750	720	1,880	340	60
20	720	247	88	2,680	158	140	34	8,070	720	1,990	600	60
21	412	216	85	1,150	178	100	38	990	720	1,780	550	77
22	293	172	80	850	220	180	42	850	750	1,580	500	322
23	260	322	69	990	242	240	46	780	750	1,230	1,310	279
24	386	336	61	2,100	265	500	48	815	750	750	780	258
25	361	216	61	2,100	312	440	46	720	720	720	440	200
26	490	198	61	1,880	312	220	46	4,500	680	600	518	200
27	464	162	72	3,570	336	150	46	1,150	600	550	440	200
28	279	128	83	4,130	312	140	46	815	630	500	390	181
29	1,880	143	83	3,440	336	110	46	......	600	460	465	181
30	1,150	336	83	2,920	312	130	46	......	572	440	465	238
31	690	361	......	1,680	......	120	46	......	572	......	390	......
Mean	717	346	226	1,040	455	188	67	1,110	1,360	935	460	256

NOTE.—Daily discharge estimated, April 27 to May 22, and June 14 to 20, inclusive, by comparison with the records at St. Helena. Discharge, December 7 to February 13, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of GENESEE RIVER AT SCIO, for the year ended June 30, 1918

[Drainage area; 297 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	3,710	251	717	2.41	2.78
August	1,680	121	346	1.16	1.34
September	990	61	226	0.762	0.85
October	4,130	61	1,040	3.50	4.04
November	2,680	158	455	1.53	1.71
December	500	100	188	0.633	0.73
January	150	34	67	0.226	0.26
February	8,070	46	1,110	3.74	3.90
March	10,000	572	1,360	4.58	5.28
April	1,990	440	935	3.15	3.51
May	1,310	260	460	1.55	1.79
June	518	60	256	0.862	0.96
The year	10,000	34	594	2.00	27.15

GENESEE RIVER AT ST. HELENA

Location.—At the steel highway bridge in the hamlet of St. Helena, Wyoming county, about 5½ miles below the village of Portageville and the site of the proposed storage dam of the New York State Conservation Commission, and about 9½ miles above the mouth of Canaseraga creek.

Drainage area.— 1,030 square miles.

Records available.—August 14, 1908, to June 30, 1918.

Gage.— Stevens continuous water-stage recorder, installed September 28. Prior to this date, chain gage fastened to upstream side of bridge, middle span, installed August 14, 1908, a Gurley printing water-stage recorder, installed August 24, 1911, and a Gurley seven-day water-stage recorder, installed July 22, 1916. Water-stage recorder inspected and chain gage read by Herman Piper.

Discharge measurements.— Made from the bridge at high stages and by wading at low and medium stages.

Channel and control.— Gravel and rocks; occasionally shifting.

Extremes of discharge.— Current year: Maximum stage recorded during year, 11.4 feet at 5 P. M., March 14; discharge, about 29,500 second-feet. Minimum stage recorded, 2.30 feet at 7 A. M., September 30; discharge, 148 second-feet.

1908–1918: Maximum stage, from water-stage recorder, 12.81 feet at 8 A. M., May 17, 1916; discharge, 43,500 second-feet. Minimum stage recorded, 1.70 feet at 5 P. M., October 5, and 8 A. M., October 17, 1913; discharge, approximately 18 second-feet.

Ice.— Stage-discharge relation somewhat affected by ice.

Accuracy.— Stage-discharge relation not permanent; affected by ice during most of January. Rating curve for chain gage, used July 1 to September 16, well defined between 500 and 1,600 second-feet. Rating curve used for water-stage recorder, September 17 to March 14, well defined between 75 and 2,000 second-feet and fairly well defined between 2,000 and 30,000 second-feet. Rating curve used March 15 to June 30, well defined between 150 and 1,000 second-feet and fairly well defined between 1,000 and 20,000 second-feet. Chain gage read to quarter-tenths twice daily. Operation of water-stage recorder fairly satisfactory, September 28 to November 11, and unsatisfactory, November 12 to June 30. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good except when stage-discharge relation was affected by ice and then fairly good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of GENESEE RIVER AT ST. HELENA, during the year ended June 30, 1918

DATE	Made by	Chain gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Sept. 14	J. W. Moulton	2.70	338
Sept. 14	J. W. Moulton	2.70	321
Sept. 26	J. W. Moulton	2.49	198
Oct. 29	C. S. DeGolyer	7.68	10,800
Nov. 2	E. D. Burchard	4.97	2,950
Nov. 14	C. S. DeGolyer	3.24	690
Dec. 12 *a*	C. S. DeGolyer	3.52	379
1918			
Jan. 8 *b*	C. S. DeGolyer	3.87	238
Jan. 25 *b*	C. S. DeGolyer	3.84	146
Feb. 8 *b*	C. S. DeGolyer	3.68	153
Feb. 13	C. S. DeGolyer	7.53	9,860
Mar. 9	C. S. DeGolyer	4.56	2.200
Mar. 13	C. S. DeGolyer	6.15	5,750
Mar. 15	C. S. DeGolyer	9.78	19,300
April 27	C. S. DeGolyer	3.55	880
May 25	J. W. Moulton and C. C. Covert	3.44	774
May 30	C. S. DeGolyer	3.16	588
June 27	C. S. DeGolyer	2.76	319

a Measurement made through partial ice cover. *b* Measurement made through complete ice cover.

Daily gage height, in feet, of GENESEE RIVER AT ST. HELENA, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	3.6	3.75	3.05	......	......	3.3	3.7	3.8	6.0	3.45	3.15	3.1
2	5.2	3.5	4.0	......	......	3.6	4.15	3.9	6.0	3.55	3.25	2.95
3	5.8	3.3	4.4	......	4.65	3.2	3.95	3.8	5.5	3.55	3.15	2.91
4	4.4	3.1	3.6	......	4.37	3.1	3.8	3.8	4.45	3.65	3.05	2.81
5	3.85	2.92	3.2	3.45	4.12	3.1	3.75	3.7	4.55	3.6	3.0	2.78
6	3.6	2.88	3.2	3.35	3.97	2.95	3.9	3.95	6.2	3.4	2.98	2.82
7	3.45	2.81	3.2	3.15	3.84	2.82	3.85	3.85	5.3	3.3	3.05	2.88
8	3.95	2.72	3.65	3.00	3.68	2.68	3.9	3.8	4.35	3.3	3.15	2.96
9	4.25	2.71	3.6	......	3.56	2.48	4.0	3.9	4.5	3.45	2.98	2.88
10	3.9	3.1	3.2	3.14	3.50	3.05	3.8	3.9	7.6	3.65	3.1	2.81
11	5.4	2.82	2.98	2.97	3.42	3.2	3.9	3.95	5.0	3.45	3.2	2.78
12	4.5	2.69	2.86	2.91	3.3	3.5	3.95	4.45	5.0	3.4	3.2	3.4
13	3.95	2.68	2.78	......	3.2	3.3	3.9	8.8	6.4	3.55	3.3	3.5
14	5.1	2.88	2.71	3.49	3.2	3.3	3.9	5.8	10.7	4.8	3.6	3.1
15	5.3	4.8	2.76	3.34	3.15	3.4	4.0	7.6	8.8	6.2	3.35	2.92

Discharge measurements of GENESEE RIVER AT ST. HELENA, during the year ended June 30, 1918—*Continued*

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
16.....	4.05	4.4	2.61	......	3.35	3.2	3.9	5.2	5.5	5.6	3.15	2.79
17.....	3.6	3.6	2.56	......	3.1	3.4	4.0	4.15	5.0	5.0	2.98	2.78
18.....	3.6	3.3	2.53	3.37	3.0	3.35	3.95	3.7	5.0	6.0	2.90	2.71
19.....	3.8	3.1	2.53	......	3.1	3.35	4.1	3.85	5.1	4.9	2.88	2.62
20.....	3.7	2.94	3.10	......	3.05	3.3	3.8	10.3	5.0	4.45	3.0	2.59
21.....	3.45	2.82	2.82	......	3.15	3.5	4.05	5.8	5.0	4.2	3.55	2.58
22.....	3.3	2.81	2.65	......	3.15	3.9	4.15	4.25	5.0	4.4	3.4	2.94
23.....	3.2	2.78	2.56	4.16	3.3	4.0	4.0	3.9	4.6	4.2	3.9	3.7
24.....	3.0	2.85	2.54	......	3.2	3.9	3.95	4.05	4.2	4.1	3.85	3.25
25.....	3.45	3.05	2.50	......	2.8	4.3	3.8	3.95	4.0	3.95	3.4	3.0
26.....	3.2	2.76	2.46	......	2.91	4.1	3.95	7.9	3.85	3.7	3.4	2.84
27.....	3.5	2.71	2.46	......	2.72	3.6	3.9	5.5	3.7	2.55	3.8	2.74
28.....	3.3	2.62	2.48	......	2.9	3.3	3.9	5.0	3.6	3.35	3.5	2.62
29.....	5.7	2.81	2.49	......	2.88	3.2	3.85	......	3.55	3.3	3.2	2.64
30.....	5.8	2.84	2.45	......	2.98	3.3	3.85	......	3.5	3.25	3.15	2.61
31.....	4.25	3.05	......	......	......	3.3	3.9	......	3.5	......	3.3	......

NOTE.— Stage-discharge relation affected by ice, December 10 to February 12. Mean of two observations on chain gage used, July 1 to September 16 and November 12 to June 30. Automatic gage record used, September 17, to November 11.

Daily discharge, in second-feet, of GENESEE RIVER AT ST. HELENA, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	1,040	1,200	550	245	3,980	760	220	150	5,320	790	555	530
2.....	3,450	940	1,480	268	2,950	1,040	200	190	5,320	882	628	425
3.....	3,660	760	2,030	261	2,420	670	190	170	4,100	882	555	401
4.....	2,030	590	1,040	511	1,980	590	200	160	2,100	980	488	346
5.....	1,300	454	670	895	1,640	590	200	140	2,260	930	455	329
6.....	1,040	428	670	805	1,440	475	260	240	5,850	745	443	351
7.....	895	386	670	630	1,290	392	240	190	3,660	665	488	384
8.....	1,420	332	1,090	510	1,120	309	240	170	1,960	665	555	431
9.....	1,810	326	1,040	573	1,000	221	280	170	2,180	790	443	384
10.....	1,360	590	670	622	940	240	190	180	10,400	980	520	346
11.....	3,880	392	496	489	868	320	240	240	3,050	790	590	329
12.....	2,180	314	416	447	760	360	260	850	3,050	745	590	745
13.....	1,420	309	368	820	670	240	220	15,400	6,420	882	665	835
14.....	3,250	428	326	931	670	240	220	4,810	26,000	2,480	930	530
15.....	3,660	2,680	356	796	630	300	260	10,400	14,800	5,530	705	407
16.....	1,540	2,030	270	1,540	805	220	220	3,450	3,840	4,060	555	335
17.....	1,040	1,040	246	1,150	590	320	240	1,680	2,830	2,830	443	329
18.....	1,040	760	234	823	510	280	220	1,140	2,830	5,010	395	292
19.....	1,250	590	234	1,090	590	280	280	1,300	3,020	2,650	384	247
20.....	1,140	468	590	9,170	550	240	150	25,400	2,830	1,980	455	232
21.....	895	392	392	3,830	630	380	240	4,810	2,830	1,590	882	228
22.....	760	386	292	2,180	630	650	300	1,810	2,830	1,860	745	419
23.....	670	368	247	1,690	760	750	220	1,360	2,150	1,590	1,240	1,088
24.....	510	410	238	4,470	670	750	190	1,540	1,590	1,470	1,180	628
25.....	895	550	220	8,820	380	1,200	130	1,420	1,350	1,300	745	455
26.....	670	356	204	7,040	447	1,100	190	11,500	1,180	1,030	745	362
27.....	940	326	204	10,700	332	650	170	4,100	1,030	882	1,130	308
28.....	760	276	212	12,000	440	440	170	3,050	930	745	835	247
29.....	4,570	386	216	10,800	428	360	160	......	882	665	590	257
30.....	4,810	404	200	12,300	496	320	170	......	835	628	555	242
31.....	1,810	550	......	6,500	......	260	180	......	835	......	665	......
Mean...	1.800	627	529	3,320	1.020	482	215	3,430	4,140	1.570	630	412

NOTE.— Gage height, September 17 to November 11, from water-stage recorder. Gage height for remainder of year from chain gage. Discharge, December 10 to February 12, estimated, because of ice, from discharge measurements, weather records, study of gage-height graph and comparison with similar studies for Jones bridge and Roc ester.

Monthly discharge of GENESEE RIVER AT ST. HELENA, for the year ended June 30, 1918

[Drainage area, 1,030 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	4,810	510	1,800	1.75	2.02
August	2,680	276	627	0.609	0.70
September	2,030	204	529	0.513	0.57
October	12,300	245	3,320	3.22	3.71
November	3,980	332	1,020	0.990	1.10
December	1,200	220	482	0.468	0.54
January	300	130	215	0.209	0.24
February	25,400	140	3,430	3.33	3.47
March	26,600	835	4,140	4.02	4.64
April	5,530	628	1,570	1.52	1.70
May	1,240	384	650	0.631	0.73
June	1,030	228	412	0.400	0.45
The year	26,000	130	1,510	1.47	19.87

GENESEE RIVER AT JONES BRIDGE, NEAR MT. MORRIS

Location.—At the highway bridge known as Jones bridge, 1½ miles below Canaseraga creek, about 1¾ miles above the mouth of Beads creek, about 5 miles below the village of Mt. Morris, Livingston county, and 6 miles by river above the village of Geneseo.

Drainage area.— 1,410 square miles.

Records available.— May 22, 1903, to April 30, 1906; August 12, 1908, to December 31, 1913; July 12, 1915, to June 30, 1918.

Gage.— Gurley 7-day water-stage recorder, installed September 11, 1915, on the right bank about 50 feet downstream from the bridge. Prior to 1915 a chain gage fastened to upstream side of highway bridge. Datum of water-stage recorder is 2.73 feet higher than that for the former chain gage. Water-stage recorder inspected by Theron S. Trewer.

Discharge measurements.— Made from foot-bridge erected on lower chord of bridge truss at the upstream side of the bridge.

Channel and control.— Sandy clay; fairly permanent.

Extremes of discharge.— Current year: Maximum stage during year from water-stage recorder, 25.5 feet at 3:30 A. M., February 21; discharge, about 10,000 second-feet (stage-discharge relation affected by ice). Minimum stage from water-stage recorder, 1.07 feet at 2 P. M., September 30; discharge, 198 second-feet.

1903–1918*: Maximum discharge recorded, 54,500 second-feet at noon, May 17, 1916; gage height, 25.44 feet. Minimum discharge recorded, about 18 second-feet at 6 P. M. August 29, 1909; gage height, 2.7 feet.

Ice.— Stage-discharge relation seriously affected by ice.

Regulation.— During extreme low water there is some diurnal fluctuation in flow from mills at Mt. Morris.

Accuracy.— Stage-discharge relation practically permanent between dates of shift. Affected by ice for considerable portion of January, February and March. Rating curve well defined between 150 and 7,000 second-feet and fairly well defined between 7,000 and 60,000 second-feet. Operation of water-stage recorder satisfactory throughout the year. Daily discharge ascertained by applying to the rating table mean daily gage heights determined by inspecting the gage-height hydrograph, or for days of considerable fluctuation by discharge integration. Results good except for periods when stage-discharge relation was affected by ice and results were fair.

Coöperation.— Station maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

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* Not including periods of no record. See "Records available."

Discharge measurements of GENESEE RIVER AT JONES BRIDGE, NEAR MOUNT MORRIS' during year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
July 14	E. D. Burchard	7.25	3,870
Aug. 24	C. S. DeGolyer	2.09	613
Nov. 1	E. D. Burchard	11.12	6,040
Nov. 1	J. W. Moulton	10.12	5,320
Nov. 2	J. W. Moulton	7.40	3,900
Dec. 19 *a*	E. D. Burchard	2.98	530
1918			
Jan. 16 *a*	E. D. Burchard	2.59	318
Feb. 11 *b*	E. D. Burchard	2.96	313
Feb. 13 *b*	E. D. Burchard	12.40	3,700
Feb. 14 *b*	E. D. Burchard	21.42	6,860
Feb. 15 *b*	E. D. Burchard	21.60	8,450
Feb. 16 *b*	E. D. Burchard	21.90	7,920
Feb. 26 *b*	E. D. Burchard	22.00	11,700
Feb. 27 *b*	E. D. Burchard	21.50	8,400
Mar. 2 *b*	E. D. Burchard	19.21	6,970
Mar. 4 *b*	E. D. Burchard	15.00	4,120
Mar. 15	E. D. Burchard	24.20	28,300
Mar. 18	E. D. Burchard	8.90	4,890
Mar. 19	E. D. Burchard	7.08	3,770
May 23	E. D. Burchard	3.21	1,190

a Measurement made through complete ice cover. *b* Ice jam on control.

Daily gage height, in feet, of GENESEE RIVER AT JONES BRIDGE, NEAR MOUNT MORRIS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	3.9	4.7	2.4	1.40	......	2.65	......	2.3	15.9	......	2.65	2.55
2	......	3.2	......	1.53	7.7	3.45	......	2.35	19.8	......	2.65	2.25
3	......	2.8	4.5	1.56	6.4	2.9	......	2.3	17.8	3.4	2.6	2.1
4	......	2.5	......	......	5.7	2.6	......	2.3	14.3	3.5	2.5	2.0
5	4.3	2.25	2.7	3.0	5.0	2.5	......	2.3	12.6	3.6	2.45	1.90
6	3.6	2.15	2.5	2.9	4.6	2.25	......	2.25	15.8	3.1	2.4	1.88
7	3.9	2.0	2.5	2.35	4.3	2.05	2.5	2.25	17.2	2.85	2.35	1.94
8	4.0	1.92	......	2.15	4.0	2.6	2.5	2.3	11.4	2.9	2.85	1.95
9	4.9	1.88	3.6	2.25	3.7	3.8	2.5	2.4	8.4	3.1	2.55	2.05
10	4.5	2.2	2.7	2.35	3.4	3.7	2.5	2.45	......	3.6	2.6	1.90
11	......	2.15	2.3	2.1	3.25	3.7	2.45	3.15	......	3.15	3.1	1.85
12	6.4	1.90	2.1	1.99	3.1	3.7	2.5	7.1	......	3.15	2.9	2.35
13	4.8	1.80	1.95	......	3.0	3.9	2.5	17.5	17.8	3.25	2.85	3.3
14	......	1.91	1.83	2.95	2.8	3.8	2.5	21.2	23.0	......	3.35	2.55
15	......	......	1.75	2.55	2.75	3.6	2.5	22.0	23.3	......	3.2	2.2
16	5.2	4.7	1.64	......	2.7	3.3	2.5	21.3	......	8.7	2.75	1.94
17	4.0	3.45	1.60	......	2.7	3.2	2.45	17.4	......	7.1	2.5	1.75
18	3.8	2.75	1.56	2.7	2.6	3.05	2.5	13.2	8.4	......	2.35	1.79
19	3.9	2.45	1.55	......	2.55	2.95	2.45	12.1	7.0	......	2.2	1.64
20	4.2	2.25	2.5	......	2.5	2.9	2.45	22.6	7.3	5.8	2.25	1.50
21	3.4	2.1	2.35	......	2.45	3.2	2.7	23.9	7.2	5.0	3.25	1.52
22	3.4	1.98	1.85	5.6	2.5	3.8	2.7	19.4	7.0	5.2	3.3	1.78
23	2.85	2.0	1.65	4.5	2.7	4.0	2.6	15.4	6.3	5.2	3.3	......
24	2.55	......	1.57	......	2.7	4.1	2.5	13.0	5.2	4.6	4.1	2.7
25	2.65	......	1.54	......	2.35	4.9	2.5	12.4	......	4.3	3.1	2.25
26	2.9	1.97	1.48	15.0	2.2	5.8	2.5	19.5	......	3.9	......	1.94
27	2.7	1.76	1.44	......	2.1	4.8	2.4	20.9	......	3.4	4.3	1.75
28	......	1.68	1.46	......	2.1	4.0	2.4	17.9	......	3.05	3.07	1.64
29	......	1.80	1.45	......	2.25	3.5	2.45	......	......	3.0	2.9	1.56
30	......	2.0	1.30	......	2.3	3.0	2.45	......	......	2.7	2.75	1.45
31	......	2.1	......	......	......	2.9	2.45	......	......	......	2.75	......

NOTE.— Stage-discharge relation affected by ice, December 8 to March 22.
Owing to considerable fluctuation in gage heights on certain days, the discharge is computed by integration and the mean gage height is not published.

Daily discharge, in second-feet, of GENESEE RIVER AT JONES BRIDGE, NEAR MOUNT MORRIS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	1,600	2,080	765	305	7,050	892	460	190	5,000	1,200	892	840
2.....	3,510	1,200	1,290	353	4,200	1,330	460	190	7,000	1,200	892	690
3.....	5,560	975	1,960	365	3,240	1,030	440	170	6,000	1,300	865	615
4.....	2,610	815	1,370	502	2,750	865	440	180	4,200	1,360	815	565
5.....	1,840	690	920	1,080	2,280	815	380	160	3,600	1,420	790	515
6.....	1,420	640	815	1,030	2,020	690	340	150	4,800	1,140	765	506
7.....	1,600	565	815	740	1,840	590	320	150	5,500	1,000	740	585
8.....	1,660	525	1,190	640	1,660	650	300	160	3,000	1,030	1,000	540
9.....	2,220	506	1,420	690	1,480	600	300	180	4,570	1,140	840	590
10.....	2,000	665	920	740	1,800	600	300	200	8,310	1,420	865	515
11.....	4,030	640	715	615	1,220	600	280	440	10,700	1,170	1,140	492
12.....	3,240	515	615	560	1,140	600	300	1,660	9,700	1,170	1,030	740
13.....	2,150	470	540	857	1,080	600	300	5,800	12,500	1,220	1,000	1,250
14......	3,130	520	484	1,060	975	600	280	7,500	21,600	2,790	1,280	840
15.....	5,710	1,990	448	840	948	550	280	8,000	22,300	6,790	1,200	665
16.....	2,410	2,080	399	1,540	920	550	280	7,360	12,100	4,970	948	585
17.....	1,660	1,330	381	1,320	920	550	260	5,560	7,980	3,760	815	466
18.....	1,540	948	365	920	865	550	260	3,860	4,500	5,740	740	466
19.....	1,600	790	361	1,120	840	500	260	3,260	3,500	4,270	665	399
20.....	1,780	690	315	10,500	815	500	260	8,500	3,800	2,820	690	341
21.....	1,300	615	740	5,080	790	650	320	9,000	3,700	2,280	1,220	349
22.....	1,300	555	492	2,680	815	900	320	6,500	3,600	2,410	1,250	461
23.....	1,000	565	403	1,960	920	1,000	300	4,600	3,170	2,410	1,250	1,120
24.....	840	590	369	4,740	920	1,100	260	3,600	2,380	2,020	1,720	920
25.....	892	590	357	13,700	740	1,500	240	3,400	2,000	1,840	1,140	690
26.....	1,030	550	334	10,800	665	2,000	260	6,500	1,700	1,600	1,440	535
27.....	920	452	319	18,200	615	1,500	220	7,600	1,600	1,300	1,840	443
28.....	1,150	416	327	16,500	615	1,000	220	6,000	1,400	1,110	1,480	399
29.....	2,800	470	323	15,100	690	750	220	......	1,400	1,080	1,030	365
30.....	8,150	565	271	17,300	715	550	220	......	1,800	920	948	323
31.....	2,570	615	......	14,100	......	500	220	......	1,300	......	948	......
Mean...	2,360	794	681	4,550	1,500	810	300	3,600	5,940	2,130	1,040	590

NOTE.— Discharge, December 8 to March 22, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of GENESEE RIVER AT JONES BRIDGE, NEAR MOUNT MORRIS, for the year ended June 30, 1918

[Drainage area, 1,410 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	8,150	840	2,360	1.67	1.92
August	2,080	416	794	0.563	0.65
September	1,960	271	681	0.483	0.54
October	17,300	305	4,550	3.23	3.72
November	7,050	615	1,500	1.06	1.18
December	2,000	500	810	0.575	0.66
January	460	220	300	0.213	0.25
February	9,000	150	3,600	2.56	2.67
March	22,200	1,300	5,940	4.21	4.85
April	6,790	920	2,130	1.51	1.69
May	1,840	665	1,040	0.738	0.85
June	1,250	323	590	0.418	0.47
The year	22,200	150	2,020	1.43	19.45

GENESEE RIVER AT GENESEE JUNCTION

This station, established May 14, 1917, is located at the mouth of Black creek, which enters the Genesee river from the west at Genesee Junction, about 5½ miles above the city of Rochester and just above the West Shore railroad bridge over the Genesee river. The gage, No. 227, a standard Type A gage, having a range of 18 feet, between elevations 510.0 and 528.0 (B. C. datum), is secured to the east wing of the north abutment of the Scottsville highway bridge over Black creek. The gage is read once daily, to half-tenths, except that during high-water periods in February and March it was read twice daily.

Daily elevation of water-surface (B. C. datum) of GENESEE RIVER AT GENESEE JUNCTION, for the year ended June 30, 1918. J. Horton Begy, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	510.6	510.1	508.5	508.0	517.6	509.4	509.6	509.2	516.58	510.3	509.4	512.1
2	511.4	509.45	508.7	508.0	515.8	509.7	509.4	509.2	514.0	510.25	509.2	511.9
3	514.0	509.15	509.65	508.1	513.05	509.9	509.4	509.2	515.4	510.2	509.2	511.75
4	512.15	508.9	510.05	508.2	512.2	510.1	509.4	509.2	514.1	510.1	509.1	511.55
5	510.75	508.7	509.15	508.65	511.4	510.0	509.4	509.2	513.3	510.1	509.1	511.25
6	510.05	508.6	508.95	509.0	510.95	509.85	509.4	509.2	513.1	510.0	509.1	510.95
7	509.85	508.5	508.8	508.9	510.7	509.6	509.4	509.2	512.9	509.85	509.05	510.5
8	509.85	508.4	508.7	508.8	510.35	509.5	509.2	509.2	513.0	509.8	509.05	510.5
9	510.7	508.3	509.35	508.6	510.2	509.4	509.2	509.2	513.1	509.8	509.0	510.45
10	510.8	508.3	509.15	508.4	510.1	509.2	509.2	509.8	514.0	509.7	509.0	510.45
11	510.9	508.4	508.95	508.4	510.0	509.0	509.2	510.3	515.3	509.5	509.0	510.35
12	512.3	508.25	508.6	508.4	509.95	509.0	509.25	513.8	515.9	509.45	509.0	510.3
13	511.2	508.15	508.4	508.5	509.85	509.0	509.2	515.05	517.8	509.3	509.0	510.45
14	510.65	508.4	508.4	508.6	509.75	509.0	509.2	518.65	519.78	512.95	509.0	510.6
15	513.3	508.05	508.35	508.65	509.7	509.0	509.2	519.82	521.12	514.15	508.9	510.6
16	512.15	510.1	508.3	508.7	509.7	509.0	509.2	519.3	522.08	513.4	508.9	510.5
17	510.4	509.8	508.3	508.7	509.6	509.0	509.2	518.7	521.58	512.85	508.9	510.35
18	510.15	509.05	508.25	509.05	509.6	509.0	509.2	516.25	517.92	514.35	509.9	510.25
19	510.5	508.85	508.25	509.15	509.55	509.0	509.2	513.42	514.6	514.0	510.5	510.2
20	511.2	508.5	508.2	514.15	509.55	509.0	[a]	516.7	518.98	512.9	511.4	510.15
21	510.15	508.45	508.4	515.1	509.5	509.0	[a]	518.35	513.5	511.7	511.6	510.1
22	509.8	508.45	508.75	512.5	509.5	509.0	[a]	518.08	513.2	511.45	511.75	510.25
23	509.45	508.35	508.65	510.5	509.5	509.0	[a]	516.75	512.9	511.3	512.1	510.25
24	509.05	508.25	508.5	511.2	509.45	509.2	[a]	514.65	512.7	511.1	512.3	510.45
25	509.2	508.3	508.35	516.75	509.35	509.6	[a]	513.4	512.35	510.7	512.45	510.7
26	509.1	508.3	508.2	517.8	509.25	509.8	[a]	514.8	511.4	510.5	512.55	510.5
27	509.05	508.25	508.15	517.0	509.25	509.8	509.2	515.68	510.85	510.35	512.8	510.35
28	509.0	508.25	508.05	517.8	509.25	509.8	509.2	518.32	510.35	510.0	512.6	510.15
29	509.05	508.25	508.0	518.1	509.4	509.8	509.2	......	510.4	509.7	512.3	510.1
30	514.35	508.25	508.0	518.5	509.5	509.8	509.2	......	510.35	509.6	512.2	510.1
31	512.1	508.4	......	518.8	......	509.6	509.2	......	510.3	......	512.2	......

[a] No record.

GENESEE RIVER AT ROCHESTER

Location.—At the Elmwood avenue bridge near the north end of Genesee Valley park, 3¼ miles below the mouth of Black creek, 3½ miles above the center of the city of Rochester, Monroe county, and 7½ miles above the mouth of the river.

Drainage area.—2,360 square miles.

Records available.— February 9, 1904, to June 30, 1918. Fragmentary records prior to this period published in Water-Supply Papers 24, 65 and 97.

Gage.— Gurley printing water-stage recorder, installed in December, 1910, in the pump-house immediately below the bridge on the right bank. Recorder inspected by George A. Bailey, of Rochester Railway & Light Company. Prior to December, 1910, a staff gage, bolted to the downstream end of the first pier from the right abutment. Elevation of zero of gage, 506.848, Barge canal datum, and 245.591, Rochester city datum.

Discharge measurements.— Made from downstream side of the bridge.

Channel and control.— Smooth gravel; apparently permanent until dredging for the Barge canal commenced in May, 1918. This dredging is changing the control.

Extremes of discharge.— Current year: Maximum stage during year from water-stage recorder, 10.97 feet at 9:15 P. M., March 16; discharge, 27,900 second-feet. Minimum stage from water-stage recorder, 1.27 feet at 10 P. M., October 2; discharge, 490 second-feet.

1904–1918: Maximum stage from water-stage recorder, 15.3 feet at midnight, March 30, 1916; discharge, 48,300 second-feet. Minimum stage from water-stage recorder, 0.71 foot from 10 P. M., September 30, to 4 A. M., October 1, 1913; discharge, 154 second-feet.

Ice.— Stage-discharge relation affected by ice during a large part of the period from December to March, inclusive.

Accuracy.— Stage-discharge relation practically permanent up to May, 1918, when dredging operations for the Barge canal were commenced on the control. Affected by ice during a large portion of the period from December to March, inclusive. Rating curve well defined between 800 and 44,000 second-feet. Operation of water-stage recorder satisfactory throughout the year. Daily discharge up to May ascertained by applying to the rating table mean daily gage heights determined by averaging hourly gage heights. Daily discharge for May and June determined by indirect method. Results good for periods when the stage-discharge relation is not affected by ice or the dredging operations, and fairly good for other periods.

Coöperation.— Station maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of GENESEE RIVER AT ROCHESTER, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
		Feet	*Sec.-ft.*
1917			
Nov. 3	J. W. Moulton	4.05	4,970
Dec. 19 *a*	E. D. Burchard	1.99	865
1918			
Jan. 16 *b*	E. D. Burchard	2.18	517
Feb. 11 *b*	E. D. Burchard	1.63	400
Feb. 13 *a*	E. D. Burchard	8.36	7,720
Mar. 22	E. D. Burchard	4.59	6,440
May 22	E. D. Burchard and J. W. Moulton	2.36	1,680
June 20	E. D. Burchard	1.12	742

a Measurement made through partial ice cover.
b Measurement made through complete ice cover.

Daily gage height, in feet, of GENESEE RIVER AT ROCHESTER, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	2.9	2.9	......	1.31	7.6	2.08	1.87	1.64	5.3	2.65	2.12	1.63
2	3.25	2.33	......	1.29	5.4	2.42	1.87	1.63	5.1	2.75	2.07	1.80
3	4.5	2.07	1.88	1.33	4.1	2.44	1.87	1.66	5.8	2.75	2.06	1.67
4	4.2	1.91	2.47	1.39	3.5	2.18	1.81	1.59	5.4	2.65	2.02	1.60
5	3.15	1.73	2.43	1.53	3.2	2.08	1.84	1.65	4.45	2.65	1.94	1.58
6	2.6	1.66	1.98	2.01	2.95	1.94	1.82	1.66	4.5	2.46	1.89	1.62
7	2.46	1.60	1.82	1.98	2.8	1.84	1.58	1.66	5.4	2.34	1.86	1.67
8	2.49	1.54	1.75	1.77	2.65	1.96	1.68	1.64	5.2	2.33	1.87	1.67
9	2.8	1.49	1.85	1.68	2.55	1.98	1.80	1.67	4.35	2.37	2.01	1.59
10	3.05	1.46	2.26	1.65	2.43	1.95	1.75	1.68	4.1	2.46	1.88	1.59
11	3.1	1.56	2.00	1.70	2.36	1.86	1.73	1.66	5.6	2.43	1.96	1.62
12	4.05	1.57	1.77	1.63	2.27	1.77	1.74	2.33	5.3	2.42	2.19	1.60
13	3.45	1.47	1.62	1.56	2.22	1.74	2.31	6.7	7.8	2.47	2.15	1.76
14	3.0	1.57	1.54	1.80	2.15	1.88	2.31	6.4	8.8	3.3	1.99	2.04
15	......	1.64	1.47	2.00	2.10	2.06	2.14	7.2	9.8	4.8	1.70	2.05
16	......	2.65	1.42	1.91	2.06	2.1	2.1	7.3	10.8	4.45	1.99	1.79
17	3.0	2.55	1.38	2.38	2.05	2.05	1.88	6.7	10.3	4.15	2.35	1.6
18	2.65	2.11	1.36	2.18	2.02	2.03	1.82	5.3	7.6	5.2	1.99	1.48
19	2.9	1.83	1.37	1.9	1.98	1.98	1.78	4.05	5.2	4.9	1.87	1.37
20	2.95	1.67	1.35	3.4	1.97	1.96	1.73	5.6	4.7	3.9	1.66	1.19
21	2.75	1.59	1.57	5.6	1.92	2.02	1.68	6.8	4.6	3.4	1.83	1.15
22	2.46	1.52	1.94	3.85	1.95	2.28	1.64	7.2	4.5	3.25	2.19	1.29
23	2.31	1.45	1.7	2.9	2.03	2.65	1.66	6.4	4.1	3.3	2.45	1.19
24	2.05	1.45	1.49	2.75	2.13	2.7	1.65	4.6	3.6	3.1	2.38	1.62
25	1.87	1.46	1.44	6.2	2.06	2.95	1.64	3.85	3.3	2.95	2.39	1.66
26	1.92	1.47	1.41	7.6	1.87	3.4	1.64	5.2	3.1	2.75	2.0	1.48
27	1.98	1.46	1.36	7.1	1.75	3.5	1.62	6.4	2.95	2.55	2.3	1.25
28	1.95	......	1.34	7.4	1.76	3.0	1.61	6.6	2.85	2.41	2.8	1.15
29	2.04	......	1.33	7.7	1.77	2.7	1.65	......	2.75	2.3	2.27	1.25
30	4.05	......	1.34	7.9	1.86	......	1.65	......	2.7	2.2	2.06	1.16
31	4.45	......	......	8.2	......	1.94	1.64	......	2.65	......	2.01	......

NOTE.— Stage-discharge relation affected by ice, December 10 to February 13, and affected by dredging operations on the control, May 1 to June 30. Discharge, May 1 to June 30, determined by indirect method.

Daily discharge, in second-feet, of GENESEE RIVER AT ROCHESTER, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	2,760	2,760	880	531	14,900	1,480	850	360	8,060	2,340	1,500	900
2.....	3,400	1,880	1,060	510	8,330	1,980	750	360	7,540	2,500	1,500	1,100
3.....	6,050	1,440	1,210	553	5,130	2,010	750	400	9,430	2,500	1,400	950
4.....	5,350	1,020	2,060	619	3,880	1,620	700	340	8,330	2,340	1,400	850
5.....	3,210	1,250	2,000	776	3,300	1,480	700	420	5,930	2,340	1,300	850
6.....	2,260	932	2,900	1,380	2,850	1,280	600	420	6,050	2,040	1,200	900
7.....	2,040	860	2,620	1,340	2,590	1,150	550	420	8,330	1,860	1,100	950
8.....	2,080	788	1,040	1,070	2,340	1,320	600	400	7,800	1,840	1,100	950
9.....	2,590	729	1,180	956	2,180	1,340	650	440	5,700	1,900	1,300	850
10.....	3,030	696	1,740	920	2,000	1,300	650	440	5,130	2,040	1,100	850
11.....	3,120	812	1,370	980	1,890	1,100	650	420	8,870	2,000	1,200	900
12.....	5,020	824	1,070	896	1,760	1,000	600	1,200	8,060	1,980	1,500	850
13.....	3,780	707	884	812	1,680	1,000	600	7,500	15,600	2,060	1,500	1,100
14.....	2,940	824	788	1,110	1,580	1,000	600	11,200	19,200	3,490	1,200	1,400
15.....	5,000	908	707	1,370	1,510	1,000	550	13,600	23,000	6,900	850	1,400
16.....	5,400	2,340	652	1,250	1,450	1,000	550	14,000	27,200	5,930	1,200	1,100
17.....	2,940	2,180	608	1,920	1,440	950	550	12,100	25,100	5,240	1,700	950
18.....	2,340	1,520	586	1 620	1,400	900	550	8,060	14,900	7,930	1,200	950
19.....	2,760	1,150	597	1,240	1,340	850	500	5,020	7,800	7,030	1,000	900
20.....	2,850	944	575	3,680	1,330	800	500	8,870	6,530	4,700	800	800
21.....	2,500	848	824	8,870	1,270	900	500	12,400	6,290	3,680	1,000	800
22.....	2,020	764	1,290	4,600	1,300	1,200	500	13,600	6,050	3,400	1,400	950
23.....	1,800	685	980	2,760	1,410	1,700	500	11,200	5,130	3,490	1,800	800
24.....	1,440	685	729	2,500	1,550	1,800	480	6,290	4,080	3,120	1,700	1,400
25.....	1,180	696	674	10,600	1,450	2,200	480	4,600	3,490	2,850	1,700	1,400
26.....	1,240	707	641	14,900	1,200	3,000	460	7,800	3,120	2,500	1,100	1,200
27.....	1,370	696	586	13,300	1,040	3,200	440	11,200	2,850	2,180	1,500	900
28.....	1,300	660	564	14,300	1,060	2,200	420	11,800	2,680	1,960	2,200	800
29.....	1,440	630	553	15,300	1,070	1,800	420	......	2,500	1,800	1,600	900
30.....	5,020	650	564	16,000	1,190	1,200	420	......	2,420	1,650	1,500	800
31.....	5,930	740	......	17,000	......	950	420	......	2,340	......	1,400	......
Mean..	3,040	1,040	1,060	4,630	2,510	1,440	560	5,890	8,700	3,190	1,350	982

NOTE.— Discharge estimated, because of no gage height, July 15 and 16 and from August 28 to September 2. Discharge, December 10 to February 13, estimated, because of ice, from discharge measurements, weather records, study of gage-height graph and comparison with similar studies for St. Helena and Jones bridge. Discharge, May 1 to June 30, determined by indirect method on account of dredging operations on the control.

Monthly discharge of GENESEE RIVER AT ROCHESTER, for the year ended June 30, 1918

[Drainage area, 2,360 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	6,050	1,180	3,040	1.29	1.49
August	2,760	630	1,040	0.441	0.51
September	2,900	553	1,060	0.449	0.50
October	17,000	510	4,630	1.96	2.26
November	14,900	1,040	2,510	1.06	1.18
December	3,200	800	1,440	0.610	0.70
January	850	420	560	0.239	0.28
February	14,000	340	5,890	2.50	2.60
March	27,200	2,340	8,700	3.69	4.25
April	7,980	1,650	3,190	1.35	1.51
May	2,200	850	1,350	0.572	0.66
June	1,400	800	982	0.416	0.46
The year	27,200	340	2,850	1.21	16.40

GENESEE RIVER AT ELMWOOD AVENUE, ROCHESTER

Since the establishment of the Gurley automatic gage in December, 1910, reading of the staff gage once daily has been continued. Beginning in 1913, the gage heights from the automatic gage have been published in connection with the discharge, the water-surface elevations being continued as a separate table. In July, 1916, a standard Type A gage, No. 218, having a range of 16 feet, between elevations 507.0 and 523.0, was erected on the north, or downstream end of the east pier of the Elmwood avenue bridge. A standard bench-mark plug was placed in the north end of the same pier at elevation 520.0 (B. C. datum). This gage is read once daily — usually at 5 P. M.

Daily elevation of water-surface (B. C. datum) of GENESEE RIVER AT ELMWOOD AVE., ROCHESTER, for the year ended June 30, 1918. P. J. Slavin, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	509.4	509.3	508.4	508.0	513.8	508.3	509.1	508.3	511.9	509.3	509.1	508.5
2.....	509.9	508.8	508.3	508.0	511.7	508.6	508.9	508.3	511.55	509.4	509.1	508.2
3.....	511.5	508.6	508.9	508.0	511.0	509.0	508.9	508.2	512.45	509.4	509.1	508.4
4.....	510.8	508.6	508.2	508.0	510.3	508.6	508.5	508.2	511.9	509.3	509.1	508.1
5.....	509.5	508.6	508.8	508.1	509.7	508.4	508.3	508.2	511.0	509.3	509.1	508.3
6.....	509.1	508.4	508.5	508.4	509.4	508.3	508.3	508.2	510.9	509.2	509.1	508.2
7.....	509.0	508.2	508.4	508.5	509.3	508.3	508.3	508.2	511.8	509.2	509.1	508.3
8.....	509.0	508.1	508.4	508.4	509.2	508.3	508.3	508.2	512.2	509.2	508.5	508.2
9.....	509.5	508.0	508.8	508.3	509.1	508.3	508.3	508.2	511.0	509.2	508.4	508.2
10.....	509.5	508.1	508.7	508.4	509.1	508.3	508.3	508.2	511.5	509.2	508.4	508.2
11.....	509.3	508.2	508.4	508.2	508.9	508.3	508.3	508.2	512.0	509.2	508.4	508.2
12.....	510.5	508.2	508.3	508.2	508.8	508.3	508.3	508.4	511.5	509.2	508.4	508.3
13.....	509.9	508.2	508.1	508.4	508.7	508.3	508.3	513.4	513.9	509.2	508.4	508.6
14.....	509.5	508.5	508.0	508.9	508.5	508.3	508.3	512.95	514.9	509.3	508.5	508.8
15.....	509.5	508.2	508.0	500.0	508.4	508.3	508.3	513.8	515.9	511.0	508.5	508.5
16.....	510.4	508.6	508.0	508.4	508.4	508.3	508.3	514.0	516.9	511.2	508.9	508.3
17.....	509.3	508.5	508.0	508.2	508.4	508.3	508.3	513.25	516.9	509.5	508.9	508.2
18.....	509.2	508.5	508.0	508.6	508.4	508.3	508.3	511.75	514.9	511.5	508.3	508.2
19.....	509.4	508.4	508.0	508.2	508.4	508.3	508.3	510.66	511.9	511.6	508.2	507.9
20.....	509.3	508.2	508.0	510.2	508.4	508.3	508.3	512.25	511.2	510.5	508.1	507.8
21.....	509.2	508.1	508.4	511.5	508.4	508.3	508.3	513.05	511.2	510.0	508.6	507.8
22.....	509.0	508.0	508.4	510.0	508.4	508.3	508.3	513.8	510.9	509.8	509.2	508.0
23.....	508.8	508.1	508.1	509.5	508.4	508.3	508.3	511.25	510.7	509.6	509.0	507.5
24.....	508.5	508.2	508.0	509.3	508.4	508.5	508.3	511.25	510.5	509.5	508.9	508.5
25.....	508.4	508.1	508.0	513.6	508.4	509.35	508.3	510.4	511.2	509.4	508.9	508.5
26.....	508.4	508.0	508.0	514.0	508.3	509.85	508.3	511.55	509.9	509.3	509.0	508.1
27.....	508.5	508.0	508.0	513.5	508.3	510.0	508.3	513.2	509.5	509.3	509.1	507.9
28.....	508.6	508.1	508.0	514.0	508.3	509.9	508.3	513.2	509.4	509.1	509.4	507.9
29.....	509.2	508.0	508.0	514.2	508.3	509.5	508.3	......	509.4	509.1	508.6	507.9
30.....	511.7	508.15	508.0	514.4	508.3	509.4	508.3	......	509.4	509.1	508.6	507.8
31.....	510.6	508.3	......	514.6	......	509.2	508.3	......	509.4	......	508.6	......

CANASERAGA CREEK

DESCRIPTION

Canaseraga creek, one of the most important tributaries to the Genesee river from the east, rises in the extreme northwestern corner of Steuben county and flows in a northwesterly direction to its junction with the Genesee river, a short distance below the village of Mount Morris.

Through its entire course the creek flows through a flat, fertile valley, devoted almost entirely to the pursuit of agriculture. From the village of Dansville to Mount Morris, the natural bed of the river originally wound back and forth across the valley. The velocity was so slow that the large amount of silt which was brought down from the foot hills by the smaller streams was deposited in the creek bed, raising it to an elevation higher, in many cases, than the surrounding country. The deposit of silt, coupled with the extreme deviation of the creek from a straight line caused the 11,000 acres, which border on the stream below Dansville, to become annually inundated by the flood waters.

During 1911 to 1915, inclusive, the channel was deepened, straightened, confined in part by levees, and the length of flow materially reduced from Cumminsville bridge, a mile north or downstream from the Dansville gaging station, to Shakers Crossing, about a mile above the junction with the Genesee river.

CANASERAGA CREEK AT CUMMINSVILLE

Location.— At bridge on State road in village of Cumminsville, Livingston county, about one mile downstream from station maintained as "Canaseraga Creek near Dansville," about 1½ miles below Mill Brook and 21 miles above mouth of creek.

Drainage area.— 171 square miles. (Measured by State Conservation Commission.)

Records available.— October 23, 1917, to June 30, 1918, at this station; at station near Dansville, July 21, 1910, to December 31, 1912, and July 10, 1915, to June 30, 1917.

Gage.— Vertical staff, in three sections, on downstream face of bridge pier, graduated from 0 to 10.0. Established October 23, 1917. Read by George Freed.

Discharge measurements.— Made by wading below control at low and medium stages and from downstream side of bridge during high water.

Channel and control.— Rather well compacted gravel and small boulders; practically permanent between dates of shift, but liable to shift during severe floods.

Extreme of stage.— Current year: Maximum stage recorded during the period of record, 5.2 feet at 3:30 P. M., February 12. Minimum stage recorded during the year, 0.9 foot several times in June.

Ice.— Stage-discharge relation affected by ice.

Accuracy.— Stage-discharge relation probably permanent between dates of shift. Affected by ice during a large part of the period from December to March. Gage read to tenths twice daily. Sufficient data for computing rating table not yet available.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of CANASERAGA CREEK AT CUMMINSVILLE, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharg
1917		*Fee.*	*Sec.-ft.*
Oct. 20	E. D. Burchard	2.06	478
Oct. 20	E. D. Burchard	1.98	425
Oct. 23	E. D. Burchard	1.38	135
Oct. 25	E. D. Burchard	3.05	1,140
Oct. 25	E. D. Burchard	2.92	1,020
Dec. 20 [a]	E. D. Burchard	1.44	120
1918			
Jan. 17 [a]	E. D. Burchard	1.66	49
Feb. 12 [b]	E. D. Burchard	4.60	782
Feb. 15	E. D. Burchard	3.00	1,130
Mar. 18	E. D. Burchard	1.63	289
Mar. 21	E. D. Burchard	1.70	326
May 26	E. D. Burchard	1.45	183
May 31	J. W. Moulton	1.21	88

[a] Measurement made through complete ice cover. [b] Measurement made through partial ice cover.

Daily gage height, in feet, of CANASERAGA CREEK AT CUMMINSVILLE, for the year ended June 30, 1918

DAY	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	......	1.78	1.18	1.95	1.50	2.10	1.38	1.12	1.28
2	......	1.71	1.18	1.95	1.45	2.05	1.38	1.11	1.20
3	......	1.57	1.18	2.10	1.45	2.00	1.38	1.10	1.10
4	......	1.51	1.20	1.95	1.50	1.85	1.36	1.10	1.10
5	......	1.52	1.19	1.90	1.50	1.90	1.30	1.10	1.10
6	......	1.51	1.18	1.90	1.45	2.30	1.30	1.10	1.10
7	......	1.48	1.18	1.80	1.54	1.96	1.34	1.08	1.10
8	......	1.37	1.17	1.60	1.50	2.05	1.39	1.30	1.10
9	......	1.37	1.31	1.60	1.50	1.90	1.39	1.30	1.10
10	......	1.34	1.34	1.67	1.50	2.90	1.32	1.28	1.10
11	......	1.33	1.40	1.60	2.56	1.95	1.28	1.35	1.05
12	......	1.32	1.46	1.85	4.43	2.70	1.29	1.30	1.40
13	......	1.30	1.50	1.80	2.85	2.55	1.35	1.30	1.25
14	......	1.28	1.70	1.60	2.20	4.00	1.80	1.30	1.20
15	......	1.29	1.71	1.60	3.05	2.55	2.05	1.23	1.10
16	......	1.26	1.70	1.60	2.00	1.90	1.90	1.20	1.00
17	......	1.26	1.70	1.55	1.70	1.85	1.70	1.14	1.00
18	......	1.26	1.70	1.40	1.70	1.60	1.95	1.14	1.00
19	......	1.27	1.71	1.45	2.90	1.60	1.72	1.13	0.90
20	......	1.23	1.50	1.50	3.90	1.64	1.55	1.24	0.90
21	......	1.21	1.30	1.48	1.80	1.67	1.69	1.30	0.90
22	......	1.27	1.30	1.50	1.70	1.83	1.59	1.30	1.00
23	......	1.28	1.28	1.50	1.70	1.67	1.43	1.30	1.00
24	......	1.25	1.33	1.50	1.70	1.55	1.38	1.40	1.00
25	......	1.22	1.45	1.60	1.75	1.41	1.38	1.34	1.00
26	......	1.20	1.50	1.55	2.95	1.32	1.30	1.30	0.95
27	......	1.20	1.69	1.50	2.35	1.31	1.26	1.30	0.90
28	2.66	1.20	1.68	1.43	1.80	1.30	1.20	1.27	0.90
29[a]	2.95	1.18	1.82	1.40	......	1.36	1.20	1.30	0.90
30	2.94	1.18	2.00	1.45	......	1.36	1.16	1.34	0.90
31	2.35	......	2.00	1.50	......	1.38	......	1.30	......

NOTE.— Stage-discharge relation affected by ice, December 9 to about February 13.

CANASERAGA CREEK AT GROVELAND STATION

Location.— At the highway bridge at Groveland Station, Livingston county. The creek is flowing through the improved channel at this point.

Drainage area.— 195 square miles. (Measured by engineers of the New York State Conservation Commission.)

Records available.— August 5, 1915, to June 30, 1918.

Gage.— Chain, near center of downstream side of bridge. Prior to March 30, 1916, inclined staff gage on right bank about 400 feet above the bridge, at practically the same datum, 560.00 (Conservation Commission datum); read by Thomas Maimone.

Discharge measurements.— Made from highway bridge at medium and high stages and by wading at low stages.

Channel and control.— Gravel; likely to shift.

Extremes of stage.— Current year: Maximum stage recorded during year, 19.01 at 7 A. M., February 13; stage-discharge relation affected by ice, discharge not computed. Minimum stage recorded, 6.7 feet, several times in August and October; discharge, 47 second-feet.

1915–1918: Maximum stage recorded, 19.01 at 7 A. M., February 13, 1918; stage-discharge relation affected by ice, discharge not computed. Minimum stage recorded, 6.5 feet from 6 P. M., September 21, to 6 P. M., September 22, 1916; discharge, 36 second-feet.

Ice.— Stage-discharge relation affected by ice. Gage observations suspended.

Accuracy.— Stage-discharge relation not permanent. Rating curve, July 1 to December 8, well defined between 35 and 3,000 second-feet. Gage read to half-tenths twice daily. Daily discharge, July 1 to December 9, ascertained by applying mean daily gage height to rating table. Results good for this period. Daily discharge, February 27 to June 30, determined by indirect method. Results fairly good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of CANASERAGA CREEK AT GROVELAND STATION, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
July 11	C. S. DeGolyer	9.39	443
July 13	E. D. Burchard	8.28	240
July 13	E. D. Burchard	8.28	234
Aug. 25	C. S. DeGolyer	6.83	60.2
Sept. 20	E. D. Burchard	7.80	182
Sept. 20	E. D. Burchard	7.73	169
Oct. 25	E. D. Burchard	12.59	1,200
Oct. 26	E. D. Burchard	12.50	1,190
Oct. 31	E. D. Burchard	10.42	678
Oct. 31	E. D. Burchard	10.30	637
Nov. 1	E. D. Burchard	9.08	418
1918			
Mar. 16 [a]	E. D. Burchard	11.11	400
Mar. 18	E. D. Burchard	8.91	314
Mar. 21	E. D. Burchard	9.30	394
May 24	E. D. Burchard and J. W. Moulton	7.61	118
June 23	E. D. Burchard and C. C. Covert	7.30	88

[a] Slush ice in the current and flats below flooded, causing backwater.

Daily discharge, in second-feet, of CANASERAGA CREEK AT GROVELAND STATION, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	292	......	83	54	479	179	......	......	......	200	95	85
2.....	328	......	......	54	365	187	......	......	......	200	100	70
3.....	274	......	......	47	328	155	......	......	......	190	85	60
4.....	171	......	......	116	292	155	......	......	......	180	75	55
5.....	147	78	......	109	274	124	......	......	......	130	70	60
6.....	147	72	......	102	256	124	......	......	......	120	65	60
7.....	238	72	......	139	238	109	......	......	......	110	70	60
8.....	274	72	......	124	204	179	......	......	......	120	170	55
9.....	256	72	......	124	196	......	......	......	......	200	95	50
10.....	204	67	......	95	196	......	......	......	......	140	120	55
11.....	655	58	......	139	184	......	......	......	......	200	110	60
12.....	441	54	......	109	171	......	......	......	......	140	120	200
13.....	274	72	......	139	171	......	......	......	......	180	130	120
14.....	517	62	......	95	155	......	......	......	......	650	140	90
15.....	441	62	......	95	155	......	......	......	......	650	100	65
16.....	292	62	......	139	163	......	......	......	400	420	95	60
17.....	221	62	......	102	155	......	......	......	320	300	75	55
18.....	187	62	......	83	147	......	......	......	300	550	65	44
19.....	292	54	......	460	155	......	......	......	300	320	65	44
20.....	171	47	......	536	139	......	......	......	360	260	100	44
21.....	328	54	......	256	155	......	......	......	380	240	190	48
22.....	171	72	......	204	155	......	......	......	400	220	170	95
23.....	132	54	......	171	163	......	......	......	300	200	170	75
24.....	109	72	......	975	139	......	......	......	240	190	110	65
25.....	109	54	......	1,620	139	......	......	......	220	190	85	60
26.....	116	47	......	1,120	155	......	......	......	200	150	260	48
27.....	147	47	50	1,850	139	......	......	......	170	110	300	50
28.....	109	50	50	1,000	139	......	......	......	190	100	160	44
29.....	955	78	54	1,160	124	......	......	......	170	90	150	44
30.....	479	204	62	1,500	139	......	......	......	200	90	120	42
31.....	196	109	......	675	......	......	......	......	200	......	110	......
Mean...	280	74.4	......	416	196	......	......	......	......	228	122	65.4

NOTE.— Mean discharge, August 1 to 4, inclusive, estimated, 110 second-feet. No gage records, September 2 to 26, inclusive, and December 9 to February 11, inclusive. Discharge not determined, February 12 to March 15, inclusive, because the stage-discharge relation was affected by ice. Daily discharge estimated, March 18, April 1 and 2 and May 12.

Monthly discharge of CANASERAGA CREEK, at GROVELAND STATION, for the year ended June 30, 1918

[Drainage area, 195 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	955	109	280	1.44	1.66
August	204	47	74.4	0.382	0.44
September	....	....	....	....	....
October	1,620	47	416	2.13	2.46
November	479	124	196	1.00	1.12
December	....	....	....	....	....
January	....	....	....	....	....
February	....	....	....	....	....
March	....	....	....	....	....
April	650	90	228	1.17	1.30
May	300	65	122	0.626	0.72
June	200	42	65.4	0.335	0.37

CANASERAGA CREEK AT SHAKERS CROSSING, NEAR MOUNT MORRIS

Location.— At highway bridge at Shakers Crossing, about 1 mile above mouth and 1½ miles northeast of Mount Morris, Livingston county.

Drainage area.— 347 square miles. (Measured by engineers of the State Conservation Commission.)

Records available.— Occasional current-meter measurements, 1904 to 1915; continuous record of gage height and occasional current-meter measurements, July 13, 1915, to June 30, 1918.

Gage.— Gurley 7-day water-stage recorder, on the left bank, just below the bridge. Datum of gage same as that for gage on Genesee river at Jones bridge near Mount Morris, 540.00 (Conservation Commission datum). Recorder inspected by Mrs. Wm. Russell.

Discharge measurements.— Made from the highway bridge during medium and high stages and by wading during low stages.

Channel and control.— Firm gravel; not likely to shift; subject to backwater from Genesee river.

Extremes of stage.— Current year: Maximum stage during year, estimated from water-stage recorder, 27.9 feet at 4 A. M., February 21. Minimum stage from water-stage recorder, 8.18 feet at 5 P. M., September 16.

1915–1918: Maximum stage from water-stage recorder, 28.92 feet at 1 P. M., May 17, 1916. Minimum stage from water-stage recorder, 7.95 feet at 11 P. M., October 30, 1916.

Ice.— Stage-discharge relation affected by ice.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Stage-discharge relation is affected by the stage in the Genesee river to such an extent that discharge computations have not been made.

Discharge measurements of CANASERAGA CREEK AT SHAKERS CROSSING, NEAR MOUNT MORRIS, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		Feet	Sec.-ft.
July 11	C. S. DeGolyer	13.93	1,090
July 14	E. D. Burchard	1.77	966
Aug. 23	C. S. DeGolyer	9.08	227
Sept. 20	E. D. Burchard	9.39	379
Sept. 20	E. D. Burchard	9.51	405
Nov. 1	E. D. Burchard	15.44	1,910
Nov. 1	J. W. Moulton	14.74	1,630
Nov. 2	J. W. Moulton	12.62	990
1918			
Feb. 13 *a*	E. D. Burchard	24.97	—1,640
Feb. 14 *a*	E. D. Burchard	24.75	—1,850
Mar. 16	E. D. Burchard	22.82	5,620
May 23	E. D. Burchard	9.79	421

a Measurement shows flow upstream, due to backwater flow into creek from Genesee river caused by ice jam near Jones bridge.

Daily gage height, in feet, of CANASERAGA CREEK AT SHAKERS CROSSING, NEAR MOUNT MORRIS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	......	9.52	8.94	8.63	14.90	9.98	9.48	......	20.15	9.71	9.36	9.10
2	12.67	9.15	9.12	8.65	12.32	9.88	9.46	......	22.61	9.77	9.38	8.94
3	12.84	9.10	9.78	8.68	11.26	9.52	9.52	......	21.15	9.75	9.26	8.85
4	......	9.09	8.98	8.96	10.71	9.48	9.42	......	17.98	9.66	9.24	8.75
5	......	8.75	8.88	9.31	10.29	9.41	9.42	......	16.48	9.53	9.20	8.75
6	......	9.09	8.91	9.17	10.11	9.42	9.31	9.29	18.95	9.40	9.18	8.75
7	......	9.09	8.89	8.98	10.01	9.32	9.41	9.35	18.16	9.31	9.13	8.79
8	10.50	9.04	9.70	8.95	9.88	9.45	9.40	9.39	14.30	9.32	9.77	8.74
9	10.50	9.05	9.41	9.14	9.74	9.48	9.35	9.50	11.64	9.67	9.42	8.65
10	19.95	9.01	9.03	9.02	9.56	8.88	9.48	9.83	16.28	9.51	9.63	8.69
11	12.57	8.94	8.89	8.90	9.42	9.72	9.74	10.81	18.39	......	10.10	8.70
12	11.33	8.58	8.80	8.93	9.52	9.78	9.52	15.94	18.36	......	9.68	9.49
13	10.18	8.65	8.78	9.39	9.46	9.85	9.51	20.97	19.90	9.70	9.68	9.38
14	11.54	9.15	8.72	9.25	9.42	9.89	9.52	24.19	24.02	11.94	9.62	9.01
15	13.56	9.96	8.67	9.16	9.42	9.88	9.55	24.53	26.68	15.01	9.53	8.90
16	10.48	9.45	8.44	9.66	9.58	9.72	9.56	24.03	22.14	12.99	9.33	8.76
17	9.72	8.80	8.68	9.32	9.70	9.68	9.70	20.97	16.76	11.78	9.22	8.79
18	9.85	8.78	8.65	9.03	9.45	9.68	9.82	17.65	13.47	14.04	9.08	8.74
19	10.04	8.75	8.69	9.96	9.58	9.62	9.60	15.81	11.96	12.35	9.02	8.70
20	9.66	8.75	9.38	17.48	9.55	9.62	9.53	25.23	12.20	10.89	9.17	8.63
21	9.59	8.48	9.06	13.01	9.62	10.02	9.58	26.88	12.19	10.88	9.60	8.62
22	9.72	8.91	8.84	10.45	9.56	10.43	9.55	23.56	12.02	10.70	9.47	8.98
23	9.72	8.85	8.75	9.79	9.52	9.90	9.50	21.94	11.45	10.50	9.70	9.09
24	9.10	8.91	8.71	13.20	9.50	10.17	9.47	17.59	......	10.14	9.57	[illegible]
25	9.20	8.80	8.66	20.48	9.42	10.94	9.49	16.75	......	9.92	9.26	8.80
26	9.00	8.74	8.63	18.38	9.46	10.87	9.51	23.40	10.08	9.68	10.53	8.72
27	9.20	8.72	8.55	19.96	9.49	10.10	9.55	23.90	9.86	9.49	10.79	8.64
28	9.02	8.70	8.59	22.26	9.52	9.80	9.50	21.54	9.82	9.32	9.78	8.64
29	11.52	8.84	8.60	21.12	9.65	9.50	9.58	......	9.84	9.20	9.38	8.63
30	15.38	9.08	8.50	22.69	9.72	9.32	9.58	......	9.74	9.28	9.50	8.64
31	10.15	9.12	......	20.01	......	9.48	......	......	9.72	......	9.31	......

NOTE.— Gage height, October 20 and 21, estimated by comparison with record from Genesee river at Jones bridge; gage height, November 10 to December 18 and December 29 to January 16 from semidaily observations on inclined gage.

KESHEQUA CREEK

DESCRIPTION

Keshequa creek, the principal tributary to Canaseraga creek, has its source among the hills of northern Allegany county and flows north and northeast through Nunda and Tuscarora, joining Canaseraga creek near Sonyea, the home of the Craig Colony for Epileptics. Throughout its length of some 20 miles it flows through a narrow valley and falls about 1,200 feet. No power is developed, as the flow during the summer averages only 3 to 6 second-feet. The yearly rainfall is a little above the average for the Genesee valley and ranges from 28 to 36 inches.

KESHEQUA CREEK AT CRAIG COLONY, SONYEA

Location.— About 200 feet downstream from private highway bridge on grounds of Craig Colony at Sonyea, Livingston county.

Drainage area.— 69 square miles. (Measured by the State Conservation Commission.)

Records available.— October 31, 1917, to September 30, 1918. Records were obtained from July 22, 1910, to December 31, 1912, at a site about 200 feet upstream, and from August 29, 1915, to October 31, 1917, at a station about one mile downstream, near the D., L. & W. railroad bridge.

Gage.— Vertical staff, in three sections, on retaining wall on left bank, just above control, graduated from 0 to 10.1, installed October 27, 1917. Read by A. J. Porter.

Discharge measurements.— Low-water measurements made by wading above the gage. High-water measurements made from downstream side of bridge.

Control.— Double-crested concrete weir built by Craig Colony for maintaining water-level for their pumping plant; permanent.

Extremes of discharge.— Current year: Maximum stage recorded during period of record, 5.9 feet at 6:30 A. M., March 14; discharge, about 3,700 second-feet. Minimum stage recorded, 0.29 foot at 8 A. M., June 30; discharge, 3.1 second-feet.

Ice.— Stage-discharge relation slightly affected by ice.

Accuracy.— Stage-discharge relation permanent. Slightly affected by ice during a large part of the period from December to February. Rating curve well defined from 0 to 450 second-feet. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Results good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of KESHEQUA CREEK AT CRAIG COLONY, SONYEA, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
		Feet	*Sec.-ft.*
1917			
Oct. 26	E. D. Burchard	1.60	245
Oct. 31	E. D. Burchard	1.33	151
Nov. 3	E. D. Burchard	1.00	65
Dec. 20 *a*	E. D. Burchard	0.87	22
1918			
Jan. 17 *b*	E. D. Burchard	0.66	11
Feb. 12 *a*	E. D. Burchard	3.15	1.450
Feb. 15	E. D. Burchard	1.70	210
Mar. 16	E. D. Burchard	1.30	156
May 24	J. W. Moulton	0.64	21
June 23	E. D. Burchard	0.52	14

a Measurement made through partial ice cover.
b Measurement made through complete ice cover.

Daily discharge, in second-feet, of KESHEQUA CREEK AT CRAIG COLONY, SONYEA, for the year ended June 30, 1918

DAY	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	105	75	8	6	56	37	26	20
2	83	54	8	6	197	47	25	17
3	66	38	7	5	75	40	23	14
4	56	36	6	5	368	38	20	11.6
5	50	34	6	5	115	31	20	11.6
6	47	33	6	5	368	26	18	14
7	44	33	6	6	77	26	17	17
8	36	15	8	6	61	26	79	11.6
9	34	26	9	10	75	40	33	11
10	33	40	12	28	620	28	90	13
11	31	60	11	190	95	26	81	29
12	31	55	15	900	395	32	48	45
13	28	48	36	455	395	34	65	20
14	26	26	36	154	1,590	226	70	14
15	26	17	17	595	226	190	38	11
16	29	14	12	61	245	110	29	8.8
17	28	18	11	50	75	72	23	9.5
18	25	22	11	35	72	245	19	7.5
19	17	20	10	245	79	102	18	7
20	22	24	9	545	105	68	45	7

Daily discharge, in second-feet of KESHEQUA CREEK AT CRAIG COLONY, SONYEA, for the year ended June 30, 1918 — *Continued*

DAY	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
21	23	110	9	35	112	60	44	7.9
22	28	90	9	29	112	128	23	28
23	28	32	8	33	75	72	40	12
24	22	46	8	43	51	61	23	12
25	21	110	8	68	51	50	21	7.9
26	24	26	8	425	47	41	207	7.5
27	22	26	8	66	35	36	118	7
28	32	24	8	68	38	31	44	8.8
29	30	14	8	......	40	26	29	5.6
30	51	11	8	......	37	26	48	4.1
31	......	10	6	......	40	......	31	......
Mean	36.6	38.3	10.7	146	191	65.8	45.6	13.4

NOTE.— Discharge, December 10 to February 15, estimated, because of ice; from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of KESHEQUA CREEK AT CRAIG COLONY, SONYEA, for the year ended June 30, 1918

[Drainage area, 69 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
November	105	17	36.6	0.534	0.60
December	110	10	38.3	0.555	0.64
January	36	6	10.7	0.155	0.16
February	900	5	146	2.12	2.21
March	1,590	35	191	2.77	3.19
April	245	26	65.8	0.954	1.06
May	207	17	45.6	0.661	0.76
June	45	4.1	13.4	0.194	0.22

BLACK CREEK, MONROE COUNTY

DESCRIPTION

Black creek rises in the extreme northern part of Wyoming county in the hilly region to the south of Batavia, flows in a general northerly direction to a point just north of the village of Byron, then turns to the east and enters the Genesee river at Genesee Junction. The slope of the creek is gradual for the greater part of its course, there being but one sharp descent, near the village of Morganville, where it has a drop of about 140 feet in less than half a mile. The surrounding country is slightly rolling with some swamps and but few small ponds or lakes. The stream has numerous small tributaries, the principal one being Spring creek, which enters Black creek a short distance below the village of Byron.

BLACK CREEK NEAR GENESEE JUNCTION

This station, established May 14, 1917, is located on Black creek, about ½ mile above its junction with Genesee river. The gage, No. 228, is a standard Type A gage, having a range of 20 feet, between elevations 508.0 and 528.0 (B. C. datum). It is secured to the upstream end of the center pier of the old Genesee Valley canal aqueduct over Black creek. The gage is read once daily to half-tenths, except during high-water periods of February and March, when it was read twice daily.

Daily elevation of water-surface (B. C. datum) of BLACK CREEK AT OLD CANAL AQUEDUCT AT GENESEE JUNCTION, for the year ended June 30, 1918. J. Horton Begy, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	Ma	June
1.....	511.75	510.2	509.05	508.4	518.0	509.75	510.2	509.8	517.78	511.05	509.9	512.2
2.....	512.45	509.55	509.35	508.45	515.75	510.1	510.1	509.8	516.1	510.95	509.7	512.0
3.....	514.2	509.3	509.85	508.45	512.85	510.15	510.1	509.8	515.8	510.8	509.6	511.8
4.....	512.9	509.05	510.1	508.5	512.05	510.15	510.1	509.8	515.4	510.7	509.45	511.35
5.....	511.45	508.9	509.7	508.9	511.6	510.05	510.1	509.8	514.7	510.65	509.45	510.95
6.....	510.55	508.8	509.6	509.35	511.2	510.0	510.1	509.8	515.1	510.55	509.4	510.65
7.....	510.15	508.7	509.45	509.3	510.9	510.0	510.1	509.8	515.8	510.45	509.4	510.5
8.....	510.15	508.6	509.3	509.2	510.5	509.9	509.95	509.8	515.25	510.35	509.35	510.5
9.....	510.9	508.55	509.3	509.05	510.4	509.75	509.95	509.8	515.3	510.3	509.3	510.5
10.....	511.25	508.55	509.35	508.95	510.25	509.7	509.95	510.6	515.4	510.15	509.3	510.5
11.....	511.55	508.75	509.0	508.8	510.25	509.45	509.95	512.4	516.1	510.05	509.3	510.4
12.....	513.05	508.6	508.8	508.8	510.2	509.45	510.0	514.2	516.8	510.05	509.3	510.5
13.....	512.4	508.45	508.7	508.95	510.2	509.45	509.8	515.8	518.48	509.95	509.3	510.6
14.....	511.7	508.85	508.7	509.15	510.1	509.45	509.8	519.0	520.3	513.15	509.2	510.65
15.....	513.4	508.75	508.6	509.15	510.0	509.45	509.8	520.35	521.55	513.95	509.2	510.6
16.....	512.7	510.5	508.5	509.2	509.95	509.45	509.8	519.8	522.25	513.4	509.1	510.45
17.....	511.2	510.15	508.5	509.3	509.9	509.45	509.8	519.1	521.68	512.85	509.1	510.35
18.....	512.75	509.65	508.45	509.45	509.9	509.45	509.8	517.4	518.4	514.35	509.1	510.25
19.....	512.6	509.0	508.4	509.25	509.8	509.45	509.8	514.9	515.35	514.7	510.7	510.15
20.....	513.25	508.75	508.4	514.6	509.8	509.45	*a*	518.35	514.6	513.8	511.4	510.05
21.....	512.6	508.65	508.9	515.4	509.75	509.45	*a*	519.5	514.0	512.8	511.75	510.0
22.....	511.45	508.55	509.15	513.1	509.75	509.45	*a*	519.05	513.8	512.0	511.9	510.15
23.....	510.6	508.4	509.05	510.8	509.7	509.45	*a*	517.55	513.6	511.9	512.3	510.25
24.....	509.9	508.4	508.95	511.45	509.6	509.6	*a*	515.2	513.35	511.75	512.3	510.5
25.....	509.6	508.6	508.8	517.15	509.55	510.1	*a*	514.0	513.2	511.3	512.45	510.6
26.....	509.6	508.6	508.6	518.25	509.55	510.5	*a*	515.65	512.95	511.15	512.55	510.4
27.....	509.4	508.5	508.5	517.8	509.55	510.5	509.8	516.68	512.15	511.8	512.7	510.3
28.....	509.45	508.5	508.4	517.75	509.55	510.5	509.8	519.28	511.85	510.65	512.55	510.15
29.....	509.45	508.5	508.4	518.05	509.75	510.5	509.8	......	511.6	510.3	512.3	510.1
30.....	514.35	508.5	508.4	518.4	509.9	510.5	509.8	......	511.2	510.1	512.25	510.1
31.....	512.25	508.75	......	518.65	......	510.2	509.8	......	511.05	......	512.2	......

a No record.

CANADICE LAKE

DESCRIPTION

Canadice lake is tributary to Genesee river through Hemlock lake outlet and Honeoye creek. The area drained by the lake forms an irregular rectangle, the lake lying somewhat to the left of the longitudinal axis and the greater portion of the drainage being on the eastern slope. The western slope is narrow and precipitous. Bald hill rises from an altitude of 1,090 feet at the lake to 1,800 feet at the summit and has its axis parallel to the lake at an average distance of three-fourths of a mile from it. The lake has a water-surface area of 1.01 square miles and drains a total area of 12.6 square miles, 8 per cent of which is lake surface.

A weir was constructed at the outlet at the foot of the lake by the city engineer's department of Rochester, N. Y., in February, 1903. The entire yield of the drainage basin passes this weir.

CANADICE LAKE OUTLET NEAR HEMLOCK

Location.— In outlet, at foot of lake, which discharges to Genesee river through Hemlock lake outlet and Honeoye creek.

Drainage area.— 12.6 square miles, of which 1.01 square miles are lake surface.

Records available.—April, 1903, to date. Data also in water-supply paper, Surface Water-Supply of the United States, Part IV; St. Lawrence River Basin, published by the United States Geological Survey; also in reports of the city engineer of Rochester.

Gage.— Hook gage, in channel above weir.

Computation of discharge.—In November, 1915, the former timber and plank channel with an overfall weir about fifteen feet long, which could be shortened to five feet, was replaced by a concrete construction with an overfall weir at the same elevation with a crest ten feet long with end contraction suppressed, said weir also being capable of being reduced by vertical needles to a five-foot weir with complete end contractions.

Diversions.— No water is diverted from Canadice lake above the station.

Regulation.— Outflow of lake at dam above weir is controlled by bulkhead and gates.

Ice.— Pool above weir is free from ice throughout winter.

Accuracy.— Observations and computations made with care; the result should be very good.

Coöperation.— Data collected and furnished for publication by office of city engineer, Rochester.

Mean monthly water-surface and monthly discharge of CANADICE LAKE NEAR HEMLOCK, for the year ended June 30, 1918

[Drainage area, 12.6 square miles]

MONTH	Mean elevation of lake above low-water mark	DISCHARGE IN SECOND-FEET		RUN-OFF
		Mean	Per square mile*	Depth in inches on drainage area*
July	2.608	22.756	1.81	2.08
August	2.135	4.197	0.333	0.38
September	1.788	3.320	0.263	0.29
October	2.059	14.273	1.13	1.31
November	2.236	20.781	1.65	1.84
December	2.096	4.930	0.391	0.45
January	2.052	4.827	0.383	0.44
February	2.285	16.156	1.28	1.34
March	2.774	41.474	3.29	3.80
April	2.057	12.377	0.982	1.10
May	2.103	9.232	0.733	0.84
June	2.091	6.475	0.514	0.57
The year	2.190	13.406	1.06	14.44

* Computed by State Engineer.

NOTE.— As the outlet of the lake is controlled by gates, it is fair to state that the terminal water-surface for the year ended June 30, 1918, was 0.68 foot lower than the year before, corresponding to a loss in storage of 20,751,148 cubic feet, or a discharge of 0.658 cubic foot per second. This correction applied to the mean for the year gives 12.748 cubic feet per second, equivalent to a discharge of 1.012 second-feet per square mile of drainage area, or a depth of run-off of 13.737 inches on the drainage area.

OSWEGO–ONEIDA–SENECA RIVER DRAINAGE BASIN

DESCRIPTION OF BASIN

Oswego river is formed by the union of Seneca and Oneida rivers at Three River Point about twelve miles northwest of Syracuse, whence its course is northwestward to Oswego, where it enters Lake Ontario. The length of the river, from the junction to the mouth, is about 20.5 miles and the drainage basin along this distance is a narrow strip of country, moderately rolling. Above the junction of Seneca and Oneida rivers the basin spreads out, attaining an extreme width east and west of about 100 miles and north and south of from 70 to 80 miles. There is, on the whole, a gradual rise from the low, level lands which border Lake Ontario to the north-south ridges which separate the various lakes south of Seneca river and which farther south become merged with the still more elevated country lying along the southern boundary of the Lake Ontario watershed.

The most remarkable feature of the drainage basin is the chain of lakes stretching across its southern border. From west to east the principal lakes are, in order, Canandaigua, Keuka, Seneca, Cayuga, Owasco, Skaneateles and Oneida. These seven lakes include a water-surface of approximately 270 square miles, increased by four smaller lakes — Cross, Onondaga, Otisco and Cazenovia — to about 283 square miles. The larger of the lakes, Oneida, Cayuga and Seneca, are used for steam-towing navigation, having connection with the Erie and Oswego canals, and together with Onondaga form a part of the New Barge canal system. Cayuga and Seneca lakes are noted for their depth and for the abrupt slopes of their beds. The influence of the lakes on Oswego river is of the utmost importance in contributing to the steadiness of its flow.

Drainage areas tributary to ONEIDA LAKE AND ONEIDA RIVER *

LOCALITY	AREA IN SQUARE MILES		
	Place to place	Sub-total	Total
East branch, Fish creek.			
Head to junction with Alder creek	45.40	45.40	
Alder creek	25.70	71.10	
Junction with Alder creek to junction with Point Rock creek	36.70	107.80	
Point Rock creek	19.90	127.70	
Junction with Point Rock creek to junction with Fall brook	4.50	132.20	
Fall brook	13.50	145.70	
Junction with Fall brook to junction with Florence creek	1.30	147.00	
Florence creek	20.40	167.40	
Junction with Florence creek to junction with Furnace creek (Taberg)	1.70	169.10	
Furnace creek	14.40	183.50	
Taberg to junction with West branch, Fish creek	3.60	187.10	
West branch, Fish creek.			
Head to lower dam, Williamstown	25.80	25.80	
Williamstown to West Camden	27.10	52.90	
West Camden to junction with Mad river, Camden	14.20	67.10	
Mad river	45.40	112.50	
Camden to junction with Little river	21.60	134.10	
Little river	52.10	186.20	
Little river to McConnellsville	4.00	190.20	
McConnellsville to junction with East branch, Fish creek	11.90	202.10	
Total, East and West branches, Fish creek	....	389.20	
Junction of East and West branches, Fish creek, to junction with Wood creek	27.80	417.00	417.00
Wood creek (Oneida county).			
Above Erie canal, Rome	10.20	10.20	
Erie canal, Rome, to junction with Mud creek	2.00	12.20	
Mud creek (Oneida county)	20.00	32.20	
Junction with Mud creek to junction with Canada creek	6.40	38.60	
Canada creek	31.00	69.60	
Junction with Canada creek to junction with Stony creek	1.20	70.80	
Stony creek	20.40	91.20	
Junction with Stony creek to junction with Fish creek	31.40	122.60	122.60
Oneida creek.			
Head to Peterboro	13.40	13.40	
Peterboro to Falls	6.70	20.10	
Falls to Munnsville	15.60	35.70	
Munnsville to Kenwood	27.30	63.00	
Kenwood to Oneida Castle (State dam)	10.80	73.80	
Oneida Castle to Soonondoa creek, Oneida	2.10	75.90	
Soonondoa creek	34.30	110.20	
Soonondoa creek to Durhamville	4.80	115.00	
Durhamville to mouth	28.00	143.00	143.00
Canaseraga creek (Madison county).			
Head to Perryville	5.70	5.70	
Perryville to Erie canal	9.00	14.70	
Erie canal to Douglas ditch	8.10	22.80	
Cowaselon creek.			
Head to Clockville creek	17.20	17.20	
Clockville creek	11.10	28.30	
Clockville creek to Erie canal	5.50	33.80	
Erie canal to mouth of Douglas ditch	39.30	73.10	
Total, all above junction with Douglas ditch	....	95.90	
Junction with Douglas ditch to Lakeport	3.20	99.10	99.10
Chittenango creek.			
Erieville reservoir, water-surface	0.45	0.45	
Erieville reservoir, land drainage	3.30	3.75	
Erieville reservoir to Cazenovia lake	30.50	34.25	
Cazenovia lake, water-surface	1.70	35.95	
Cazenovia lake, land drainage	8.70	44.65	
Cazenovia lake to Chittenango falls	14.40	59.05	
Chittenango falls to State dam, Chittenango	17.90	76.95	
State dam to junction with Butternut creek	28.10	105.05	
Butternut creek.			
Head to Jamesville reservoir	47.40	47.40	
Jamesville reservoir to State dam	5.70	53.10	
State dam to junction with Limestone creek	19.20	72.30	

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* From U. S. Geological Survey topographic maps.

Drainage areas tributary to ONEIDA LAKE AND ONEIDA RIVER *— *Continued*

LOCALITY	AREA IN SQUARE MILES		
	Place to place	Sub-total	Total
Chittenango creek — *Continued.*			
Butternut creek — *Continued.*			
Limestone creek.			
De Ruyter reservoir, water-surface	1.00	1.00	
De Ruyter reservoir, land drainage	17.80	18.80	
De Ruyter reservoir, to junction with East branch	4.30	23.10	
East, or New Woodstock branch	12.60	35.70	
Junction with East branch to junction with West branch	34.50	70.20	
West branch, Limestone creek, enters above State feeder dam	24.80	95.00	
State dam to junction with Butternut creek	18.20	113.20	
Total, Butternut and Limestone creeks, above junction	....	185.50	
Junction with Limestone creek to Chittenango creek	1.10	186.60	
Total, Chittenango and Butternut creeks, above junction	....	291.65	
Junction with Butternut creek to Bridgeport	30.30	321.95	
Bridgeport to Oneida lake	4.30	326.25	326.25
Oneida lake drainage through main streams	....	1,107.95	
Big Bay creek	26.30		
Little Bay creek	11.50		
Scriba creek	45.40		
Coast drainage, north shore Oneida lake	54.50		
Coast drainage, south shore Oneida lake	28.90	166.60	1,274.55
Water-surface, Oneida lake	78.00		
Land drainage, Oneida lake	1,274.55	1,352.55	
Oneida river.			
Brewerton to Caughdenoy creek	4.80	4.80	1,357.35
Caughdenoy creek	19.30	24.10	1,376.65
Caughdenoy creek to Oak Orchard	25.10	49.20	1,401.75
Mud creek (Onondaga county)	34.70	83.90	1,436.45
Oak Orchard to Potts creek	5.00	88.90	1,441.45
Potts creek	22.90	111.80	1,464.35
Six-Mile creek (Oswego county)	24.00	135.80	1,488.35
Potts creek to Three River Point	4.50	140.30	1,492.85

Drainage areas tributary to SENECA RIVER *

LOCALITY	AREA IN SQUARE MILES			
	Place to place	Sub-total	Branch total	General total
Mud creek (Ontario county).				
Head to and including Schaffer creek	51.31			
Junction with Schaffer creek to junction with Sucker brook, Victor (formerly Ganargua creek)	25.70	77.01		
Sucker brook	20.15	97.16		
Ganargua creek.				
Victor to Erie canal, Macedon	26.20	123.36		
Macedon to junction with East Red creek, East Palmyra	55.00	178.36		
East Red creek	59.50	237.86		
East Red creek to Canandaigua outlet	61.37	299.23	299.23	
Canandaigua lake.				
Naples creek	48.55	171.97		
West river	42.08			
Other land drainage	81.34			
Water-surface	16.40	....	188.37	

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* From U. S. Geological Survey topographic maps.

Drainage areas tributary to SENECA RIVER — *Continued*

LOCALITY	AREA IN SQUARE MILES			
	Place to place	Sub-total	Branch total	General total
Canandaigua outlet.				
Foot of the lake to and including Black brook..	50.37	238.74		
Black brook to Flint creek, at Phelps..........	54.34	293.08	293.08	
Flint creek.				
Above Patten..........................	31.59			
Patten to Gorham, not including Gorham swamp..........................	24.84	56.43		
Gorham swamp..........................	5.46	61.89		
Gorham to Orleans..........................	25.57	87.46		
Orleans to junction with Canandaigua outlet at Phelps..........................	15.21	102.67	395.75	
Phelps to junction with Ganargua creek at Lyons, forming Clyde river............	48.36	444.11	743.34	
Clyde river.				
Lyons to junction with Seneca river, foot of Cayuga lake..........................	141.11	884.45	....	884.45
Seneca river.				
Seneca lake.				
Keuka lake.				
Land drainage to outlet..................	160.96			
Water-surface..........................	17.51	178.47	640.93	
Keuka outlet to Seneca lake..............	24.80	203.27		
Catharine creek.				
Above Montour Falls..................	66.46	....		
Montour Falls to Seneca lake............	29.91	96.37		
Glen creek..........................	23.53	23.53		
Direct lake drainage..........................	317.76	317.76		
Water-surface..........................	67.16	....	708.09	
Seneca river, foot of Seneca lake to Waterloo...	40.90	....	748.99	
Seneca river, Waterloo to Seneca Falls........	28.55	....	777.54	
Seneca river, Seneca Falls to Mud lock, foot of Cayuga lake..........................	7.52	....	785.06	
Cayuga lake.				
Cascadilla creek..........................	14.38			
Six-Mile creek..........................	59.05			
Buttermilk creek..........................	29.16			
Cayuga inlet..........................	67.02			
Salmon creek..........................	91.13			
Fall creek.				
Above Freeville..........................	58.68			
Virgil creek..........................	26.00	84.68		
Freeville to Cornell dam..............	30.62	115.30		
Cornell dam to Cayuga lake............	1.56	116.86		
Taghanic creek.				
Above Halseyville..........................	56.96			
Halseyville to Taghanic falls............	10.40	67.36		
Taghanic falls to Cayuga lake............	0.39	67.75		
Other Cayuga lake drainage..............	275.04	720.39		
Cayuga lake, water-surface..............	66.31	786.70	1,571.76	
Seneca river, Cayuga lake to junction with Clyde river..........................	15.42	....	1,587.18	2,471.63
Seneca river, junction with Clyde river to junction with Owasco outlet..................	146.23	....	....	2,617.86
Owasco lake.				
Owasco inlet, above Moravia..............	74.33			
Moravia to Owasco lake..................	42.92	117.25		
Direct drainage to lake..................	76.24	193.49		
Foot of lake to State dam..............	0.98	194.47		
Water-surface..........................	10.40	204.87		
Owasco outlet to junction with Seneca river..	16.73	221.60	....	2,839.46
Seneca river, junction with Owasco outlet to junction with Skaneateles outlet............	98.70	....	....	2,938.46
Skaneateles lake.				
Land drainage to foot..................	58.41			
Water-surface..........................	14.13	72.54		
Foot of lake to Willow Glen..............	1.84	74.38		
Willow Glen to Seneca river..............	16.69	91.07	....	3,029.23
Seneca river, Skaneateles outlet to Carpenter brook..........................	25.50	....	....	3,054.73

Drainage areas tributary to SENECA RIVER — *Concluded*

LOCALITY	AREA IN SQUARE MILES			
	Place to place	Sub-total	Branch total	General total
Seneca River — *Continued.*				
Carpenter brook	18.70	....	....	3,073.43
Seneca river, Carpenter brook to Baldwinsville	48.10	....	....	3,121.53
Seneca River, to Baldwinsville to Onondaga outlet	17.80	....	....	3,139.33
Onondaga lake.				
Otisco lake, land drainage to foot	41.40			
Otisco lake, water-surface	3.30	44.70		
Nine Mile creek,' Onondaga county (Otisco outlet), to Onondaga lake	74.00	118.70		
Onondaga creek.				
Above junction with West brook	40.60			
Junction with West brook to inflow to Onondaga lake	65.30	105.90		
Other land drainage to Onondaga lake	59.10	283.70		
Onondaga lake, water surface	4.70	288.40		
Onondaga outlet, lake to Seneca river	3.00	291.40	....	3,430.73
Seneca river, Onondaga outlet to Belgium	10.12	....	....	3,440.85
Seneca river, Belgium to Three River Point	4.40	....	....	3,445.24

Drainage areas tributary to OSWEGO RIVER *

LOCALITY	AREA IN SQUARE MILES		
	Place to place	Total from Three River Point	Total drainage basin
Oneida river, above Three River Point	....	....	1,492.85
Seneca river, above Three River Point	....	....	3,445.24
Oswego river, at Three River Point	....	....	4,938.09
Three River Point to Phoenix	2.32	2.32	4,940.41
Phoenix to Hinmansville	17.58	19.90	4,957.99
Hinsmanville to Ox creek	17.05	36.95	4,975.04
Ox creek	33.68	70.63	5,008.72
Ox creek to upper dam, Fulton	9.15	79.78	5,017.87
Fulton to Neatahwanta creek	9.15	88.93	5,027.02
Neatahwanta creek	21.92	110.85	5,048.94
Neatahwanta creek to Black creek	1.01	111.86	5,049.95
Black creek	37.93	149.79	5,087.88
Black creek to Battle Island	0.92	150.71	5,088.80
Battle Island to Minetto	2.11	152.82	5,090.91
Minetto to High dam	4.87	157.69	5,095.78
High dam to Oswego dam	1.22	158.91	5,097.00
Oswego dam to Lake Ontario	1.21	160.12	5,098.21

* From U. S. Geological Survey topographic maps.

OSWEGO RIVER

DESCRIPTION

The drainage area tributary to Oswego river, exclusive of Seneca and Oneida rivers, is 160 square miles. This area comprises chiefly moderately-rolling, cultivated upland, having a good depth of soil overlying the rock, which, as a rule, is visible only in the bed of the stream. A portion of the area is drained through lakes and marshes. The run-off from the direct drainage to Oswego river is moderate and the regimen differs but little from that resulting from the inflow of the two main tributaries — the Oneida and Seneca.

The river is canalized for practically its entire length by the Barge canal improvement and almost all of the 118.6 feet drop between canal pool at Three River Point and low water in Lake Ontario occurs at six dams, all having bulkhead gates for power purposes, the upper two of which have large Taintor gates for surface regulation. The Battle Island dam and old High dam have been drowned out by new structures — dam No. 5 at Minetto and dam No. 6 (new High dam) above Oswego, respectively.

In the following series of tables there are given records of the daily elevation of water-surface of the Oswego river at different gaging stations for the year ended June 30, 1918. Owing to the completion of the canal construction the locations at which certain water-surface elevations were taken have been shifted, in general being located on the finished structures. Locations of old and new gages and reasons for change are briefly noted.

The tables of elevations of water-surface are arranged in order, proceeding downstream from Three River Point to Lake Ontario. The water-surface is in general read to the nearest tenth of a foot, usually either on a staff gage or by measuring down from a reference point.

OSWEGO RIVER ABOVE DAM AT PHOENIX

Records published previous to 1914 as " above dam at Phoenix " are of " East line gage," located on the east side of the river, March 1, 1912, to May 5, 1913, between 200 and 250 feet above east bulkhead, and May 6, 1913, to December 31, 1914, at the shore end of east bulkhead. This gage was discontinued and the record is taken at the upper end of the guide-wall to Barge canal lock No. 1. Gagings which may be considered the beginning of this new record have been taken from May 18, 1912, to December 31, 1914, at the upper end of lock No. 1.

On July 27, 1916, a standard Type B gage, No. 180, was erected near the angle in the east upper guide-wall above Lock street bridge, and has a range of 12 feet, between elevations 358.0 and 370.0. A standard bench-mark plug was set in the face of the wall near the gage, at elevation 368.0 (B. C. datum).

Barge canal construction has replaced the old crest at about elevation 359.1 with two sections of fixed crest at elevation 363.0, running diagonally upstream to six Taintor gates, each twenty-eight feet six inches clear span, immediately below the Lock street bridge.

The gage is read twice daily — morning and afternoon — to tenths, with occasional readings to half-tenths.

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER ABOVE DAM AT PHOENIX, for the year ended June 30, 1918. C. E. Greenfield, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	364.0	363.8	364.0	363.88	364.0	363.85	363.55	363.6	364.2	363.82	363.85	363.85
2	363.85	363.75	364.2	363.7	364.05	364.05	363.45	363.6	364.1	363.95	363.8	364.05
3	363.75	363.7	364.0	363.6	363.9	363.88	363.35	363.82	364.3	364.0	363.75	363.8
4	363.8	363.8	363.9	363.6	363.9	363.8	363.4	364.0	364.1	363.98	363.92	363.6
5	363.75	364.0	363.9	363.5	363.9	364.0	363.3	364.0	363.95	363.98	363.92	363.65
6	363.85	363.85	363.85	363.6	363.78	363.9	363.45	364.0	363.95	363.92	363.78	363.8
7	363.75	363.8	363.8	363.7	363.7	363.8	363.5	363.9	364.1	364.1	363.95	363.95
8	363.8	363.75	363.85	363.85	363.75	363.8	363.35	363.82	364.05	364.02	363.82	363.9
9	363.8	363.7	363.85	363.75	363.75	363.8	363.25	363.8	364.0	364.05	363.8	364.05
10	363.85	363.55	363.8	363.75	363.7	363.7	363.22	364.02	364.2	364.1	363.78	363.92
11	363.9	363.5	363.95	363.8	363.9	363.65	363.25	364.1	364.4	364.02	363.75	363.75
12	363.9	363.65	363.9	363.8	363.8	363.85	363.35	364.0	364.0	364.1	364.0	363.68
13	363.8	363.7	363.85	363.78	363.85	363.9	363.62	364.0	364.12	364.1	364.05	363.65
14	363.8	363.6	363.85	363.9	363.8	363.95	363.7	363.7	364.35	364.3	363.95	363.7
15	363.9	363.6	363.82	363.9	363.7	363.95	363.65	363.75	364.45	364.0	363.95	363.65
16	363.8	363.65	363.95	363.85	363.85	364.05	363.62	364.25	364.7	363.95	363.9	363.78
17	363.75	363.7	363.95	363.8	363.9	364.05	363.65	364.45	364.6	363.8	363.85	363.7
18	363.75	363.75	363.9	363.8	364.0	364.0	363.8	364.4	364.65	363.92	363.85	363.4
19	363.75	363.95	363.98	363.8	363.85	364.0	363.95	364.1	364.6	364.15	363.85	363.45
20	363.8	363.95	363.9	363.9	363.85	364.0	364.0	364.3	364.6	364.25	363.85	363.72
21	363.75	363.9	363.8	364.0	363.8	363.95	364.0	364.5	364.6	364.45	363.9	363.95
22	363.8	363.8	363.72	363.98	363.9	363.85	364.05	364.5	364.6	364.2	363.95	363.85
23	363.7	363.85	363.72	363.92	363.8	364.15	364.0	364.25	364.6	363.85	363.92	363.75
24	363.7	363.9	363.8	363.9	363.8	364.1	363.8	364.25	364.75	363.65	363.9	363.7
25	363.8	363.9	363.7	363.9	363.9	364.2	363.7	363.8	364.6	363.6	363.85	363.7
26	363.8	364.05	363.8	364.05	363.85	364.1	363.6	364.1	364.45	363.8	364.02	363.6
27	363.65	364.2	363.95	364.0	363.9	363.9	363.85	364.35	364.35	363.85	363.88	363.6
28	363.8	364.0	363.9	364.0	363.8	363.75	363.95	364.3	364.25	364.12	363.8	363.6
29	363.85	364.0	363.9	364.0	363.85	363.6	363.92	......	364.1	364.05	363.92	363.6
30	363.8	364.0	363.95	364.0	363.8	363.78	363.8	......	364.0	363.9	363.7	363.85
31	363.8	363.95	......	363.95	......	363.65	363.7	......	364.05	......	363.7	......

OSWEGO RIVER BELOW DAM AT PHOENIX

The record of water-surface, "1,600 feet below dam at Phoenix," is that of the "North line gage" and has been taken as follows: November 1, 1910, to February 9, 1914, at junction of canal and river about 1,600 feet below the dam; February 10, 1914, to May 14, 1914, in river at temporary bridge about 800 feet below dam; May 15, 1914, and thereafter, in canal at lower end of Barge canal lock No. 1, at which location the surface is practically the same as at the junction of the canal and river.

On July 28, 1916, a standard Type B gage, No. 179, was erected on the end of the lower north approach wall to lock No. 1, and has a range of 16 feet, between elevations 352.0 and 368.0. The gage bench-mark, a copper plug set in stone at northwest corner of lock No. 1, is at elevation 368.55 (B. C. datum).

The gage is read twice daily — morning and afternoon — to tenths, with occasional readings to half-tenths.

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER, 1,600 FEET BELOW DAM AT PHOENIX, for the year ended June 30, 1918. C. E. Greenfield, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	356.5	354.6	353.25	353.7	355.5	354.85	353.15	353.5	357.65	357.0	355.9	354.85
2.....	356.5	354.45	354.2	352.95	355.55	355.2	352.75	353.8	357.1	356.35	355.68	354.55
3.....	356.1	354.05	354.5	352.95	355.5	354.7	353.15	353.2	356.9	355.95	355.5	354.4
4.....	356.2	353.8	353.5	352.95	355.6	354.8	352.8	353.85	357.0	356.0	355.02	354.75
5.....	355.55	354.45	353.35	352.9	355.3	354.25	352.95	353.4	356.9	355.98	354.9	355.25
6.....	355.55	354.65	353.25	353.0	355.6	354.15	352.2	354.1	356.8	355.95	354.7	354.75
7.....	355.55	353.6	353.2	352.9	355.1	354.25	352.4	353.9	357.05	355.6	354.7	354.5
8.....	355.1	353.1	353.25	353.5	354.85	354.6	353.35	353.9	357.3	355.75	354.5	354.65
9.....	355.1	353.0	353.85	353.0	354.6	354.6	353.75	353.8	357.25	356.0	354.45	354.82
10.....	355.25	353.1	353.95	353.05	354.5	354.85	353.15	354.15	356.8	356.35	354.35	355.15
11.....	355.6	353.0	353.1	353.2	354.75	354.55	353.15	354.2	358.0	356.08	354.65	354.95
12.....	355.35	352.7	353.2	353.15	354.5	354.05	353.2	354.05	357.6	356.35	354.3	354.85
13.....	355.5	353.25	353.2	353.25	354.95	354.05	353.55	354.1	357.2	356.42	354.9	354.45
14.....	355.5	353.15	353.05	353.15	355.05	354.15	353.4	354.55	357.7	356.65	354.7	354.5
16.....	355.3	353.35	353.05	353.55	354.95	354.3	353.45	355.45	358.12	356.35	354.8	354.6
16.....	355.6	353.2	353.5	353.25	354.2	354.25	353.45	356.1	358.3	355.9	354.85	354.72
17.....	355.5	353.0	353.65	353.3	354.55	354.75	353.55	356.25	358.7	355.7	354.75	354.45
18.....	354.9	353.15	353.2	353.25	355.02	354.2	353.35	355.95	358.55	355.82	354.8	354.05
19.....	355.2	353.5	353.2	353.2	354.25	353.9	353.3	356.05	358.72	356.2	354.4	354.5
20.....	354.75	353.75	353.4	353.55	354.15	353.85	354.3	357.5	358.75	356.4	354.25	353.45
21.....	355.05	353.3	353.2	354.7	354.5	354.0	354.6	357.45	358.75	356.75	354.45	354.35
22.....	354.65	353.1	353.28	355.0	354.25	354.1	353.6	357.9	358.75	356.75	354.55	355.0
23.....	354.7	353.1	353.65	354.95	354.35	354.4	353.5	357.75	358.8	356.45	354.7	355.25
24.....	354.65	353.15	354.25	354.85	354.6	354.1	353.75	357.25	358.6	356.3	354.75	354.4
25.....	354.6	353.25	353.05	355.45	354.7	355.4	353.6	356.95	358.62	355.95	354.65	354.35
26.....	354.7	353.55	353.1	355.5	354.2	355.15	353.6	357.6	358.45	355.65	354.85	354.1
27.....	354.5	353.75	353.1	355.05	354.9	354.35	353.85	358.95	358.15	355.9	354.15	354.4
28.....	354.85	353.4	353.2	355.15	354.35	353.9	353.8	358.4	358.05	356.0	355.18	354.1
29.....	354.25	353.3	353.05	354.95	354.5	353.5	353.85	......	357.85	356.15	355.15	354.3
30.....	354.3	353.25	353.2	355.35	354.2	353.7	353.8	......	357.72	356.0	355.25	354.35
31.....	354.65	353.2	......	355.4	......	353.75	353.8	......	357.15	......	354.6	......

OSWEGO RIVER AT HINMANSVILLE

The Hinmansville highway bridge across the Oswego river is about three miles north of Phoenix. This station was established April 13, 1904, and discontinued February 25, 1914, owing to the removal of the old highway bridge. During this period a chain gage located on the downstream side of the bridge pier was read. The station was reëstablished January 1, 1915. A direct-reading staff gage, located on the south abutment of a highway bridge over the mouth of the creek entering the river from the west immediately above the abutment of the Hinmansville bridge, was replaced on August 8, 1916, by a standard Type A gage, No. 178, erected in the same location and having a range of 11½ feet, between elevations 351.5 and 363.0. The gage bench-mark, consisting of a square cut in the southwest corner of the south abutment of the highway bridge over the creek, is at elevation 362.899 (B. C. datum).

The gage is read once daily to half-tenths.

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER AT HINMANSVILLE BRIDGE, NEAR PHOENIX, for the year ended June 30, 1918. Leon Hallenbeck, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	355.45	354.3	353.0	353.8	355.0	354.4	352.7	353.35	356.4	355.7	355.0	354.05
2	355.45	354.3	353.65	353.0	355.1	354.9	352.5	353.5	356.1	355.0	354.9	353.9
3	355.1	354.0	354.6	352.75	354.65	354.0	352.75	354.15	356.0	355.0	354.75	354.1
4	355.0	353.6	353.3	352.8	355.25	354.5	352.7	353.7	356.1	355.0	354.3	354.2
5	354.8	354.45	353.15	352.6	354.45	353.5	352.8	353.5	356.1	355.05	354.0	354.2
6	354.7	354.3	353.05	352.9	354.85	353.7	352.1	353.2	355.95	355.0	354.3	354.25
7	354.6	353.81	353.0	353.15	354.9	353.9	351.9	353.35	356.4	354.7	354.6	354.15
8	354.1	353.0	353.0	353.4	354.3	353.9	352.9	353.5	356.1	355.15	354.1	354.2
9	355.5	353.1	353.7	353.2	353.85	354.6	353.0	353.7	356.3	355.15	354.0	354.7
10	354.45	353.0	354.0	353.0	353.95	354.1	352.85	354.45	355.65	354.9	353.9	354.8
11	354.55	353.0	353.15	352.9	354.4	353.8	352.8	353.7	357.2	354.4	354.1	354.2
12	354.5	352.5	353.05	353.1	354.1	353.5	353.0	353.2	356.6	355.3	354.0	354.3
13	354.65	352.85	352.95	353.15	354.3	353.6	353.1	353.5	356.2	355.1	353.9	354.15
14	354.65	353.0	353.0	353.15	354.5	353.65	353.0	353.7	356.2	355.6	354.1	353.9
15	354.0	353.0	353.9	353.85	354.5	353.95	353.1	354.7	356.4	355.2	354.2	354.0
16	354.35	353.1	353.5	353.1	354.3	354.7	353.1	355.75	356.6	354.85	354.4	354.4
17	354.35	353.0	353.7	353.0	354.05	354.0	353.2	355.8	357.0	355.15	354.3	354.45
18	354.1	353.1	353.0	353.0	354.6	353.94	353.5	355.2	356.85	355.2	354.3	353.4
19	354.65	353.3	353.0	353.0	353.6	353.7	353.75	355.2	357.0	355.25	354.0	354.2
20	354.05	353.55	353.3	353.4	353.55	353.3	354.6	356.4	356.8	355.5	354.2	353.05
21	354.65	353.0	353.15	354.0	353.95	353.5	354.1	357.0	356.8	355.8	354.25	353.5
22	353.85	353.0	353.0	354.4	354.2	353.7	353.7	357.3	356.8	355.5	354.2	354.5
23	354.0	353.1	354.0	354.45	354.1	354.35	353.3	356.4	356.9	355.5	354.1	354.2
24	354.0	352.98	353.9	354.7	354.0	354.7	353.2	356.2	357.0	355.4	354.3	354.2
25	354.0	353.0	352.9	354.85	354.4	355.35	353.2	356.5	356.6	354.9	354.6	354.0
26	353.85	353.0	353.0	355.15	354.1	354.6	353.3	357.55	356.6	355.0	355.55	353.7
27	354.1	353.95	353.0	354.55	354.0	354.3	353.85	357.75	356.45	355.2	354.75	353.8
28	354.6	353.1	353.15	354.65	353.9	353.9	353.4	357.35	356.45	355.3	354.9	353.9
29	354.0	353.15	353.05	354.4	354.4	353.7	353.35	......	355.8	355.0	354.6	353.85
30	354.25	353.0	352.9	354.2	353.8	353.0	353.2	......	355.4	355.1	354.75	354.3
31	354.45	353.15	......	354.85	......	352.9	353.6	......	355.65	......	354.0	......

OSWEGO RIVER AT OX CREEK

Ox creek enters the Oswego river from the west, four miles upstream from the upper dam at Fulton. On April 12, 1904, a gaging station was established near its junction with Oswego river. A direct-reading staff gage, located on the downstream end of the north abutment of the Fulton-Phoenix highway bridge over Ox creek, was replaced on August 7, 1916, by a standard Type A gage, No. 177, in the same location. A standard bench-mark plug was set in the face of the abutment near the gage at elevation 358.0 (B. C. datum). This gage is about 700 feet upstream from the mouth of the creek and during floods in the creek there may be some slight drop between the gage and the river.

The gage is read once daily — at about 11 A. M.— to half-tenths and even hundredths.

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER AT MOUTH OF OX CREEK, NEAR FULTON, for the year ended June 30, 1918. B. M. Wilcox, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	354.48	354.00	352.80	352.80	354.20	353.92	352.50	352.22	355.08	354.40	354.10	354.00
2	354.48	353.78	353.85	352.50	354.15	354.48	352.52	352.90	355.10	354.22	354.00	353.65
3	354.00	353.32	354.22	352.60	354.00	353.84	352.50	353.90	354.65	354.18	354.00	354.05
4	353.85	353.14	352.80	352.48	354.80	353.78	352.34	353.54	354.92	354.15	353.80	354.00
5	354.00	354.10	352.72	352.50	353.58	353.45	352.28	352.60	354.80	354.10	353.72	353.82
6	353.70	353.94	352.62	352.76	354.10	353.28	351.50	352.92	354.92	354.16	353.92	354.00
7	353.85	352.90	352.72	353.05	353.85	354.10	351.50	352.90	354.84	353.95	353.80	353.70
8	353.50	352.40	352.74	352.70	353.50	353.80	352.60	352.90	355.22	354.30	353.70	354.00
9	353.68	352.48	353.85	352.68	353.30	353.82	352.60	352.90	354.90	354.35	353.76	354.30
10	353.70	352.70	353.45	352.80	353.42	353.54	352.54	353.64	354.90	354.40	353.52	354.28
11	353.85	352.70	352.80	352.60	354.00	352.90	352.52	353.22	356.50	354.15	354.00	353.68
12	353.82	352.30	352.65	352.50	353.12	352.80	352.48	353.00	355.72	354.40	353.50	353.95
13	353.90	352.80	352.68	352.82	353.90	352.52	353.52	352.90	354.80	354.24	353.90	353.48
14	353.85	352.62	352.68	353.00	353.75	352.32	352.80	352.95	354.80	354.60	354.00	353.58
15	353.40	352.58	352.70	352.75	353.58	352.30	352.00	353.75	354.78	354.50	353.68	354.00
16	354.00	352.78	353.28	352.72	353.40	354.15	351.42	353.85	355.00	354.15	353.90	354.00
17	353.84	352.72	352.95	352.68	353.74	353.65	351.80	354.50	355.50	354.08	353.80	354.30
18	353.30	352.82	352.70	352.68	354.65	352.90	352.52	353.78	355.24	354.18	354.00	354.20
19	353.60	353.20	352.84	352.72	353.18	352.80	352.80	353.85	355.15	354.35	353.65	353.72
20	353.40	353.28	352.75	352.85	353.35	352.72	354.40	354.90	355.00	354.50	353.50	352.68
21	353.80	352.78	352.80	354.18	354.00	352.80	354.15	354.72	355.12	354.95	353.75	352.90
22	353.34	352.85	352.85	354.08	353.38	352.90	352.90	355.25	355.10	354.72	353.78	354.30
23	353.45	352.80	353.80	354.12	353.54	353.70	352.90	355.00	355.25	354.20	353.85	353.52
24	353.40	352.75	353.20	354.15	353.60	353.00	352.86	355.12	355.42	354.35	353.98	353.72
25	353.65	352.70	352.78	354.30	353.88	354.85	352.80	354.48	355.15	354.02	353.45	353.22
26	353.55	353.32	352.82	354.64	353.35	353.82	352.92	354.80	354.90	354.28	354.52	353.80
27	353.52	354.35	352.66	353.85	354.00	353.10	353.28	355.18	354.80	354.30	353.92	353.58
28	354.00	352.75	352.86	354.20	353.40	352.75	353.00	355.25	354.68	354.50	353.98	353.55
29	353.70	352.80	352.75	354.00	353.90	352.50	352.90	......	354.80	354.35	353.88	353.52
30	353.60	352.70	353.15	353.50	353.40	353.20	352.78	......	354.80	354.22	353.90	353.85
31	353.86	352.78	......	354.32	......	352.90	351.50	......	354.34	......	353.68	......

OSWEGO RIVER ABOVE UPPER DAM, FULTON

The record previously published as "above Oswego Falls Dam, Fulton," is from a gage located a short distance above the dam on the river side of the upper approach wall to Barge canal lock No. 2, and was discontinued, November 30, 1914. Gagings on the other side of the wall, *i. e.* in the approach to the lock, giving the water-surface above the dam more correctly than those on the river side of the wall, were begun June 7, 1912. On August 9, 1916, the staff gage was replaced by a standard Type A gage, No. 176, erected at the south end of the upper west gate recess of lock No. 2, and having a range of 12 feet, between elevations 349.0 and 361.0. A standard bench-mark plug was set in the wall near the gage at elevation 358.0 (B. C. datum).

The gage is read twice daily — at 8 A. M. and 4 P. M. — to half-tenths.

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER ABOVE UPPER DAM, FULTON, for the year ended June 30, 1918. Ed. L. Parker, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	354.25	354.05	352.90	353.30	354.10	354.10	352.75	352.80	353.85	353.75	353.80	354.10
2	353.95	353.65	354.00	352.80	354.12	354.65	352.05	353.15	353.85	353.60	353.80	353.70
3	353.75	353.45	354.18	352.75	354.08	353.40	352.70	353.98	354.00	353.78	353.65	353.90
4	353.75	353.30	353.05	352.68	354.60	353.90	352.35	353.30	353.90	353.70	353.65	354.00
5	353.62	354.40	352.85	352.68	353.68	353.30	352.60	352.90	353.80	353.72	353.60	354.00
6	353.60	354.10	352.80	352.82	353.90	353.35	352.10	353.22	354.05	353.70	353.70	354.15
7	353.55	353.25	352.90	353.10	353.80	353.40	352.18	353.05	354.20	353.60	353.90	353.75
8	353.15	352.75	352.92	353.02	353.45	354.00	352.82	353.10	354.38	353.95	353.60	354.02
9	353.55	352.82	353.80	352.80	353.30	353.90	352.85	353.05	354.25	354.00	353.65	354.35
10	353.60	352.82	353.58	352.90	353.35	353.18	352.75	353.85	353.70	354.10	353.58	354.15
11	353.90	352.80	352.85	352.90	354.00	353.12	352.80	353.65	353.25	353.90	353.95	353.52
12	353.55	352.70	352.90	352.85	353.15	352.75	352.80	353.10	352.55	354.05	353.80	353.88
13	353.70	353.00	352.78	352.95	353.45	352.90	353.40	352.85	353.95	354.15	353.90	353.55
14	353.70	353.05	352.85	353.15	353.95	352.95	352.85	353.00	354.00	354.25	354.10	353.90
15	353.40	353.25	352.78	353.15	353.82	353.30	353.05	353.70	354.00	354.20	353.65	353.80
16	353.80	353.00	353.35	352.90	353.25	354.15	352.95	354.50	354.10	353.95	353.88	354.30
17	353.60	352.80	353.25	352.90	353.75	353.80	352.95	354.70	354.55	354.00	353.92	353.65
18	353.42	352.90	352.82	353.00	354.40	352.95	353.05	353.65	354.20	353.90	353.50	353.25
19	353.78	353.38	352.85	352.85	353.00	352.82	352.95	353.90	354.08	354.00	353.90	353.80
20	353.42	353.25	352.85	353.10	352.95	352.80	354.40	354.45	354.05	354.10	353.55	352.92
21	353.80	352.92	352.85	354.45	354.15	352.90	353.10	354.45	354.00	354.45	353.90	353.15
22	353.30	352.92	352.90	354.20	353.30	353.15	353.10	354.25	354.05	354.15	353.85	353.28
23	353.52	352.88	353.70	354.25	353.50	353.90	352.80	354.55	354.05	353.65	353.85	353.80
24	353.48	352.82	353.45	354.25	353.75	352.95	352.85	354.70	354.40	353.80	353.70	353.80
25	353.60	352.95	352.80	354.30	354.20	352.95	352.95	353.80	353.95	353.65	453.85	353.60
26	353.70	353.55	352.80	354.50	353.28	354.05	352.95	354.00	353.80	353.70	353.82	353.45
27	353.62	353.40	352.88	353.95	354.10	353.15	353.55	354.05	353.95	354.10	353.95	353.80
28	353.52	352.95	352.90	354.15	353.50	352.80	353.10	354.05	354.00	354.45	354.05	353.82
29	353.70	352.95	352.80	353.85	353.80	352.75	352.95	......	353.90	354.15	353.90	353.50
30	353.65	352.90	353.15	353.45	353.35	353.52	353.00	......	354.00	353.80	354.02	354.00
31	354.00	352.90	......	354.15	......	353.20	352.95	......	353.88	......	353.78	......

OSWEGO RIVER BELOW UPPER DAM, FULTON

This station was established February 11, 1913, as gage "No. 66 about 2,300 feet above lower dam," Fulton, which is practically the same location as that occupied by direct-reading staff gage at the end of the west lower approach wall to Barge canal lock No. 2, which was replaced on August 10, 1916, by a standard Type B gage, No. 175, erected at the same location and having a range of 12 feet, between elevations 333.0 and 345.0. A standard bench-mark plug was set in the wall near the gage at elevation 340.0 (B. C. datum).

The gage is read twice daily — at 8 A. M. and 4 P. M.— to half-tenths.

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER BELOW UPPER DAM, FULTON, for the year ended June 30, 1918. Ed. L. Parker, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	338.25	336.22	335.72	336.08	337.20	336.42	335.20	335.10	338.15	338.20	337.15	336.45
2.....	337.80	336.00	335.85	335.22	337.28	337.10	335.00	335.05	337.85	337.70	337.00	337.12
3.....	337.68	336.00	336.05	335.18	337.10	336.80	335.00	336.55	338.25	337.30	336.65	336.30
4.....	338.52	335.90	335.85	335.15	337.50	336.98	335.65	335.00	337.90	337.35	336.65	335.90
5.....	337.82	336.10	335.88	335.00	337.40	336.58	335.70	335.40	337.90	337.30	337.40	336.55
6.....	337.78	336.42	335.60	335.15	337.15	336.40	335.95	335.95	337.80	337.60	336.10	335.80
7.....	337.75	336.12	335.40	335.65	337 10	336.40	335.30	335.80	337.95	337.95	335.92	335.95
8.....	338.18	335.88	335.48	335.80	337.02	336.40	334.65	335.75	337.90	337.05	336.00	335.75
9.....	337.30	335.0	335.82	335.30	336.95	336.45	335.25	335.45	338.00	337.30	335.85	336.75
10.....	337.62	335.20	336.25	335.18	336.85	335.55	334.95	336.10	338.40	337.55	335.85	336.85
11.....	337.90	335.20	335.48	335.68	337.20	335.55	334.70	336.35	338.10	337.50	336.00	336.40
12.....	337.58	335.68	335.55	335.68	336.80	335.60	334.95	335.20	338.10	337.40	336.90	336.10
13.....	337.78	335.32	335.50	335.72	336.90	335.65	335.65	335.8	338.15	337.60	336.30	335.75
14.....	337.7	335.35	335.3	335.55	336.75	335.40	335.40	336.00	338.50	338.35	336.95	336.30
15.....	338.2	335.05	335.35	336.15	336.85	335.85	335.00	336.20	338.60	337.40	336.45	335.90
16.....	337.52	335.35	335.55	335.90	336.68	336.00	334.95	336.50	338.70	337.30	336.25	336.75
17.....	337.68	335.30	335.95	335.95	336.42	336.35	334.95	337.10	339.25	337.20	336.42	335.98
18.....	337.30	335.40	335.68	335.60	337.00	336.05	334.90	336.75	339.05	337.10	336.22	335.45
19.....	337.35	335.68	335.72	335.58	336.75	335.82	334.65	336.75	338.95	337.35	337.00	335.75
20.....	336.82	335.90	335.85	335.60	336.80	335.80	335.95	337.50	339.10	337.40	336.20	334.45
21.....	336.95	335.75	335.50	336.25	336.75	335.85	335.20	337.60	339.08	338.35	335.95	335.55
22.....	337.55	335.55	335.68	336.55	336.85	335.85	334.90	337.60	338.95	337.80	335.70	335.90
23.....	336.72	335.45	335.85	336.55	336.65	335.90	335.15	337.80	338.90	337.65	336.20	336.70
24.....	336.85	335.55	336.25	336.55	336.70	336.60	335.25	337.95	339.40	337.40	336.05	335.52
25.....	336.68	335.50	335.70	336.60	337.25	336.55	335.30	337.50	338.90	337.25	336.05	335.75
26.....	336.80	335.80	335.20	336.95	336 45	336.55	335.20	337.80	338.75	337.25	337.50	335.25
27.....	336.45	336.15	335.42	336.80	336.50	336.15	335.65	338.00	338.60	337.25	336.85	335.58
28.....	336.65	335.98	335.20	337.00	336.70	335.85	335.25	338.15	338.50	337.95	336.70	335.65
29.....	336.70	335.78	335.15	336.45	336.32	335.55	335.20	......	338.45	337.40	336.65	335.40
30.....	336.00	335.90	335.55	337.32	336.70	335.48	335.40	......	338.35	337.30	336.98	336.55
31.....	336.22	335.62	......	337.20	......	335.75	334.75	......	338.75	......	336.15	......

OSWEGO RIVER ABOVE LOWER DAM, FULTON

This station was established December 9, 1909, to obtain water-surface elevations only. The record has been taken at one or the other of two gages, giving practically the same readings, *i. e.* gage No. 54 on west bank about 600 feet above the dam and gage No. 64 on east side of river about 700 feet above dam.

A direct-reading staff, located on the east side of the river on the retaining wall just inside the south end of the open docking approach above Barge canal lock No. 3, was replaced on August 10, 1916, by a standard Type B gage, No. 174, erected at the same location and having a range of 12 feet, between elevations 332.0 and 344.0. A standard bench-mark plug was set in the face of the wall at elevation 340.0 (B. C. datum).

The gage is read twice daily to half-tenths — at 6 A. M. and 6 P. M., July 1 to November 18 and May 26 to June 30, and at 8 A. M and 4 P. M., November 19 to May 25.

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER ABOVE LOWER DAM, FULTON, for the year ended June 30, 1918. H. H. Carlin, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	338.28	335.90	335.82	335.82	337.18	336.40	335.12	335.00	338.15	338.10	337.15	336.18
2.....	338.18	335.95	335.75	335.20	337.15	337.20	335.02	335.08	337.88	337.65	337.00	337.10
3.....	337.85	335.95	336.15	335.12	337.10	336.78	334.70	336.25	338.42	337.30	336.70	336.70
4.....	338.18	335.72	336.22	335.02	337.42	336.88	335.68	335.25	337.90	337.32	336.65	336.15
5.....	338.12	336.25	335.72	335.02	337.55	336.48	335.62	335.60	337.88	337.35	337.40	335.95
6.....	337.85	336.32	335.48	335.05	337.10	336.35	335.90	335.95	337.88	337.32	336.10	335.88
7.....	337.78	335.50	335.35	335.78	337.05	336.45	335.35	335.65	337.90	338.05	335.90	336.02
8.....	337.65	335.55	335.45	335.62	337.00	336.35	335.00	335.65	337.95	337.08	336.10	335.62
9.....	337.72	334.90	336.20	335.75	336.95	336.15	335.02	335.45	338.00	337.30	335.90	336.55
10.....	337.50	335.45	335.95	335.25	336.90	335.35	334.88	336.10	338.40	337.48	335.80	336.55
11.....	337.65	335.02	335.15	335.25	337.10	335.45	334.85	336.15	337.80	337.40	336.00	336.80
12.....	337.65	335.78	335.52	335.30	337.60	335.40	335.00	335.70	338.10	337.85	336.85	336.45
13.....	337.72	335.22	335.42	335.45	336.72	335.35	335.55	335.78	338.25	337.60	336.45	335.95
14.....	337.75	335.10	335.30	335.72	336.70	335.72	335.28	335.95	338.60	338.38	336.80	335.55
15.....	337.85	335.08	335.40	335.60	336.70	335.70	335.18	336.25	338.65	337.52	336.42	336.02
16.....	337.80	335.15	336 05	335.78	336.50	335.95	335.15	336.50	338.80	337.18	336.35	336.75
17.....	337.70	334.78	336.25	335.85	336.32	336.15	335.02	337.25	339.30	337.00	336.32	336.65
18.....	337.28	335.02	335.42	335.50	336.95	335.80	335.00	336.75	339.10	337.00	335.90	335.62
19.....	337.05	335.92	335.68	335.50	336.80	335.75	334.88	336.70	339.00	337.40	336.78	335.68
20.....	336.72	335.62	335.65	335.70	336.75	335.78	335.95	337.35	339.05	337.58	336.45	335.15
21.....	336.80	335.55	335.48	336.30	336.85	335.85	335.25	337.52	339.05	338.40	335.75	335.15
22.....	337.28	335.28	335.65	336.50	336.85	335.65	334.95	337.72	339.00	337.65	336.05	335.80
23.....	337.12	335.35	336.00	336.55	336.70	335.95	335.15	337.75	338.92	337.60	336.08	336.72
24.....	336.70	335.42	336.00	336.55	336.70	336.55	335.55	337.88	339.32	337.35	335.92	336.15
25.....	336.70	335.42	335.70	336.45	336.95	336.05	335.12	337.50	338.92	337.15	335.85	335.35
26.....	336.60	335.92	335.05	336.95	336.50	336.40	335.22	337.70	338.75	336.80	337.20	335.22
27.....	336.25	335.90	335.50	336.47	336.68	336.12	335.45	338.05	338.55	337.00	336.60	335.32
28.....	336.28	335.70	335.55	337.15	336.70	335.95	335.28	338.15	338.50	338.00	336.30	335.25
29.....	336.70	335.70	335.45	337.20	336.28	335.80	335.00	......	338.45	337.40	336.30	335.15
30.....	336.78	335.72	336.00	337.05	336.78	335.60	335.80	......	338.28	337.22	336.40	336.28
31.....	335.85	335.70	......	337.15	......	335.75	335.20	......	338.82	......	336.02	......

OSWEGO RIVER BELOW LOWER DAM, FULTON

This station was established April 1, 1909, as gage No. 47 at end of east lower approach wall to and about 1,100 feet below Barge canal lock No. 3. The gage is at present located on the east lower approach wall immediately below lock No. 3 and under the Oneida street bridge. A direct-reading staff was replaced on August 11, 1916, by a standard Type A gage, No. 173, in two sections, erected at the same location. The lower section has a range of 8 feet, between elevations 306.0 and 314.0, and the upper section has a range of 4 feet, between elevations 314.0 and 318.0. A standard bench-mark plug was set in the face of the wall near the upper section at elevation 317.0 (B. C. datum). The record obtained at these gages is the elevation of the river at its junction with the canal at the lower end of a dike separating the canal and river for a distance of about 3,500 feet below lock No. 3.

The gage is read twice daily to half-tenths — at 6 A. M. and 6 P. M., July 1 to November 18 and May 26 to June 30, and at 8 A. M. and 4 P. M., November 19 to May 25.

Da evation of water-surface (B. C. datum) of OSWEGO RIVER BELOW LOWER DAM, FULTON, for the year ended June 30, 1918. H. H. Carlin, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	310.80	308.35	308.25	308.18	309.72	308.60	308.45	308.40	312.48	311.90	310.35	308.60
2	310.95	308.40	308.12	308.10	309.90	308.18	308.38	308.45	312.40	311.22	310.10	308.50
3	310.70	308.25	308.12	308.05	309.62	308.80	308.05	308.02	311.42	310.65	309.65	308.80
4	310.70	308.12	308.18	308.00	309.18	308.82	308.08	308.30	311.85	310.55	309.20	308.62
5	310.75	308.20	308.10	308.00	309.45	308.82	308.20	308.48	312.00	310.90	308.65	308.50
6	310.30	308.20	308.18	308.05	309.60	308.72	307.75	308.68	312.05	310.50	308.75	308.32
7	310.00	308.10	308.12	308.00	309.35	308.65	308.25	308.55	312.15	311.05	308.40	308.40
8	309.72	308.10	308.05	308.00	309.10	308.50	308.10	308.65	312.15	310.45	308.60	308.30
9	309.65	307.78	308.05	308.20	308.95	308.45	308.00	308.45	312.28	310.70	308.40	308.55
10	309.92	307.98	308.12	308.10	308.90	308.52	308.08	308.35	312.15	310.90	308.40	308.85
11	309.70	308.30	308.00	308.25	308.45	309.00	308.10	308.70	311.80	310.80	308.55	308.90
12	309.78	307.98	308.18	308.15	308.80	308.65	308.15	308.15	312.38	310.95	308.25	308.70
13	309.90	308.00	308.12	308.08	308.70	308.55	307.90	308.65	312.30	311.10	308.60	308.38
14	309.85	308.00	307.95	308.00	308.75	308.60	308.52	309.05	312.55	311.45	309.30	308.25
15	308.90	308.05	308.08	308.00	308.70	308.60	308.35	309.35	311.95	311.00	309.30	308.45
16	309.80	308.22	308.10	308.15	308.60	307.90	308.30	309.65	313.00	310.55	308.75	308.40
17	309.90	307.95	308.10	308.20	308.35	309.30	308.42	310.85	312.85	310.30	308.60	308.65
18	309.35	308.00	308.00	308.00	308.60	308.75	307.88	311.05	313.40	310.50	308.50	308.35
19	308.95	308.00	308.25	308.05	308.98	308.85	308.05	310.40	313.32	310.80	308.32	308.35
20	308.82	308.10	308.28	308.10	308.75	308.70	307.95	311.85	313.35	311.05	308.52	308.10
21	308.95	308.15	308.20	308.10	308.75	308.68	308.40	312.60	313.38	311.80	308.55	308.15
22	308.88	307.75	308.25	308.45	308.75	308.65	308.12	313.10	313.30	311.40	308.45	308.42
23	308.88	308.10	307.95	308.45	308.70	307.95	308.40	312.80	313.30	311.35	310.00	308.40
24	308.75	308.15	308.05	308.60	308.65	308.75	308.55	311.70	312.75	310.85	308.55	308.50
25	308.65	308.12	308.20	308.55	308.30	308.40	308.30	311.90	313.25	310.50	308.40	308.30
26	308.70	307.95	307.95	309.10	308.80	309.10	308.30	311.90	313.05	310.30	308.75	308.20
27	308.42	308.05	308.65	309.00	308.75	308.75	308.25	312.50	312.80	310.05	309.50	308.20
28	308.45	308.08	308.10	308.88	308.75	308.40	308.35	312.70	312.65	309.65	309.30	308.22
29	308.35	308.25	308.02	308.95	308.42	308.40	308.45	......	312.42	310.45	308.85	308.65
30	308.28	308.15	308.10	309.55	308.85	308.05	308.60	......	312.22	310.45	308.95	308.45
31	308.25	308.10	......	309.42	......	308.90	308.50	......	311.82	......	308.75	......

OSWEGO RIVER AT MINETTO

At Minetto a new curved dam (No. 5) with fixed concrete ogee crest 500 feet long at elevation 308.0, radius 192 feet, has been built immediately above the old straight dam, crest elevation 297.3, which has been removed. The upper pool was raised and water first flowed over new crest October 5, 1914.

Location.— In the village of Minetto at new Barge canal dam No. 5, about five miles above the mouth of the Oswego river.

Drainage area.— 5,091 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— Water-surface elevations above and below old or new dam, April 18, 1904, to June 30, 1918. Discharge, October 1, 1914, to June 30, 1918.

Gages.—Above dam, until August 18, 1916, direct-reading staff on wing of retaining wall, west bank, about 400 feet upstream from dam. Since August 18, a standard Type A gage, No. 172, erected at the end of upper east gate recess of lock No. 5, and having a range of 11½ feet, between elevations 304.0 and 315.5. A standard bench-mark plug was set in the wall near the gage at elevation 314.0 (B. C. datum).

Below dam, until August 18, 1916, concrete gage just below lower gates of lock No. 5. Since August 18, a standard Type B gage, No. 171, erected on the end of the lower west approach wall to lock No. 5, and having a range of 12 feet, between elevations 288.0 and 300.0. A standard bench-mark plug was set in the wall near the gage at elevation 296.0 (B. C. datum).

These gages are read twice daily — at 8 A. M. and 4 P. M.— to tenths.

Discharge measurements.— Flow over crest and through powerwheels calculated from hourly readings furnished by the Niagara, Lockport and Ontario Power Company, lessee. Wheels not tested in place. Discharge over dam from curve prepared by this Department. During lower stages the power-plant uses all water available, the pool being drawn down to crest of dam. Water used for canal purposes estimated by this Department.

Control.— Dam crest, Barge canal lock No. 5 and power-plant of the Northern New York Power Company. The latter started testing wheels September 8, 1915.

Extremes of discharge.— Current year: Maximum mean daily discharge, 22,070 second-feet on March 24. Minimum mean daily discharge, 880 second-feet on August 12.

1915–1918: Maximum stage recorded, elevation 313.35, April 5, 1916; discharge, 30,900 second-feet. Minimum stage recorded, September 24, 1916; discharge, 740 second-feet.

Regulation.— By the large number of lakes in the drainage area and by pondage at Fulton and Phoenix.

Accuracy.— It is believed that the water passed through the wheels is somewhat underestimated, due to the lack of actual tests of wheels in place, but that the estimated discharge at this station is nearer correct than that obtained at High dam, which is based on only one or two daily readings.

Coöperation.— Discharge data furnished as above by the Niagara, Lockport and Ontario Power Company.

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER ABOVE DAM AT MINETTO, for the year ended June 30, 1918. H. M. Searles, Observer.

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	309.35	308.0	308.15	308.1	309.0	308.05	308.0	308.1	310.3	310.5	309.4	308.1
2.....	309.55	308.1	308.0	308.05	309.15	308.05	308.0	308.05	310.05	309.95	309.25	308.05
3.....	309.55	308.05	308.2	308.05	308.75	308.05	307.95	308.0	309.55	309.5	308.85	308.1
4.....	309.35	308.05	308.1	308.05	308.65	308.0	308.0	308.1	309.65	309.5	308.3	308.1
5.....	309.4	308.05	308.1	308.1	309.15	308.1	308.0	308.05	310.0	309.75	308.0	308.1
6.....	309.15	308.05	308.05	308.05	308.7	308.0	307.85	308.0	309.95	309.45	308.1	308.05
7.....	309.05	308.05	308.0	308.1	308.5	308.0	308.0	308.05	310.1	310.55	308.05	308.05
8.....	308.85	308.0	308.05	308.1	308.3	308.0	308.05	308.1	310.1	303.4	308.05	308.1
9.....	308.7	308.0	308.05	308.05	308.2	308.0	307.95	308.1	310.3	309.5	308.0	308.0
10.....	308.8	308.0	308.15	308.0	308.05	308.05	307.95	307.95	310.5	309.7	308.15	308.15
11.....	308.65	308.1	308.05	308.1	308.1	308.0	308.05	308.0	309.8	309.7	308.1	308.05
12.....	308.65	308.05	308.05	308.05	308.15	308.05	308.0	308.0	310.4	309.75	308.05	308.05
12.....	308.9	308.1	308.05	308.0	308.2	308.1	307.85	308.1	310.4	309.85	308.1	308.0
14.....	308.85	308.1	308.0	308.0	308.25	308.15	308.1	308.1	310.85	310.7	308.35	308.1
15.....	308.75	307.95	308.05	308.15	308.0	308.05	308.0	308.0	311.1	309.85	308.5	308.05
16.....	308.75	308.2	308.0	308.2	308.1	308.05	307.95	308.05	311.25	309.5	308.1	308.0
17.....	308.85	308.1	308.2	308.1	308.05	308.2	307.95	308.05	311.15	309.4	308.1	308.1
18.....	308.45	308.1	308.0	308.0	308.05	308.1	307.9	308.25	311.7	309.4	308.05	308.05
19.....	308.35	308.05	308.1	308.15	308.1	308.2	307.9	308.05	311.6	309.7	308.15	308.05
20.....	308.05	308.15	308.05	308.05	308.05	308.1	307.95	309.25	311.65	309.85	308.2	308.05
21.....	308.15	308.1	308.05	308.05	308.1	308.05	308.0	309.45	311.7	311.1	308.1	308.1
22.....	308.25	308.15	308.1	308.15	308.05	308.05	308.0	309.7	311.65	310.25	308.1	308.15
23.....	308.1	308.1	308.1	308.15	308.1	308.0	308.05	309.7	311.55	310.6	309.45	308.05
24.....	308.15	308.05	308.1	308.1	308.1	308.0	308.05	309.25	311.3	309.85	308.25	308.1
25.....	308.15	308.05	308.05	308.15	308.0	308.0	308.0	309.4	311.5	309.55	308.15	308.0
26.....	308.25	308.0	308.0	308.3	308.1	308.15	308.0	309.75	311.35	309.4	308.35	308.05
27.....	308.1	308.15	308.0	308.4	308.05	308.05	308.0	310.1	311.15	309.15	309.2	308.05
28.....	308.15	308.15	308.0	308.2	308.1	308.05	308.1	310.4	311.0	308.85	308.75	308.05
29.....	307.7	308.05	308.05	308.2	308.1	307.95	308.05	......	310.9	309.5	308.15	308.3
30.....	308.1	308.0	308.05	308.9	308.15	307.95	308.1	......	310.8	309.35	308.15	308.0
31.....	308.1	308.05	......	308.7	......	308.0	308.05	......	310.6	......	308.05	......

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER BELOW DAM AT MINETTO, for the year ended June 30, 1918. H. M. Searles, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	293.85	292.3	292.05	291.85	293.2	292.45	291.95	291.9	295.0	294.5	293.65	292.8
2.....	293.8	292.3	291.35	291.75	293.25	292.4	291.95	291.55	294.8	294.15	293.45	292.7
3.....	293.95	292.15	292.15	291.75	293.15	292.7	291.6	291.65	294.3	293.8	293.3	292.85
4.....	293.75	291.95	292.0	291.55	293.0	292.8	291.6	291.65	294.5	293.75	293.05	292.8
5.....	293.7	291.7	291.95	291.55	293.2	292.6	291.3	291.75	294.6	294.05	292.75	292.7
6.....	293.65	292.5	291.9	291.5	293.1	292.55	291.1	292.0	294.6	293.8	292.95	292.7
7.....	293.5	292.15	291.85	291.05	293.2	292.65	291.5	292.15	294.75	293.4	292.65	292.55
8.....	293.45	292.0	291.8	291.5	293.1	292.55	291.55	292.05	294.75	293.75	292.6	292.3
9.....	293.15	291.85	291.45	291.7	293.0	292.35	291.8	291.85	294.85	293.8	292.55	292.35
10.....	293.15	291.45	292.2	291.6	292.8	292.55	291.5	291.25	294.5	293.95	292.4	292.65
11.....	293.35	291.7	291.75	291.75	292.45	292.4	291.5	292.00	294.45	293.95	292.35	292.9
12.....	293.4	290.85	291.8	291.85	292.85	291.95	291.55	291.75	294.9	294.1	292.0	292.85
13.....	293.45	291.75	291.85	291.65	292.7	292.1	291.0	292.05	294.9	294.1	292.55	292.7
14.....	293.4	291.65	291.6	291.1	292.8	292.4	291.75	292.45	295.1	293.9	292.95	292.55
15.....	293.45	291.5	291.8	291.65	292.8	292.2	291.75	292.7	295.15	294.1	293.1	292.55
16.....	293.45	291.55	291.25	291.75	292.7	291.7	291.95	292.9	295.3	293.9	292.8	292.65
17.....	293.45	291.55	291.95	291 85	292.45	292.2	291.8	292.65	295.2	293.75	292.75	292.45
18.....	293.2	291.75	291.9	291.85	292.35	292.0	291.55	293.2	295.55	293.75	292.7	292.15
19.....	293.2	291.05	291.9	291.85	292.7	292.4	291.45	293.15	295.5	293.95	292.25	292.25
20.....	292.95	292.15	291.9	291.85	292.65	292.25	291.2	293.75	295.5	294.1	292.4	292.0
21.....	293.0	291.8	292.1	291.5	292.65	291.95	291.5	293.95	295.5	293.85	292.65	292.2
22.....	292.75	291.85	291.8	292.5	292.75	292.1	291.7	294.05	295.45	294.4	292.55	292.35
23.....	292.85	291.75	291.3	292.5	292.55	291.5	291.85	294.1	295.45	294.35	292.85	292.15
24.....	292.85	291.85	292.15	292.6	292.55	292.15	292.0	293.9	295.2	294.0	292.6	292.25
25.....	292.55	291.75	291.7	292.65	292.25	292.15	291.8	294.0	295.4	293.85	292.5	292.2
26.....	292.8	291.25	291.6	292.85	292.75	292.4	291.9	294.15	295.3	293.75	292.9	292.2
27.....	292.65	292.15	291.7	292.95	292.7	292.35	291.2	294.6	295.15	293.5	293.1	292.2
28.....	292.55	291.95	291.75	292.7	292.65	292.1	291.65	294.9	295.05	293.4	293.0	292.3
29.....	292.3	292.0	291.7	292.85	292.35	292.1	291.9	......	294.9	293.75	293.0	291.9
30.....	292.35	292.0	291.4	293.2	292.65	291.45	292.05	......	294.85	293.75	292.9	292.1
31.....	292.35	292.1	......	293.0	......	291.95	291.9	......	294.6	......	292.6	......

Daily discharge, in second-feet, of OSWEGO RIVER AT MINETTO, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	9,960	4,440	3,030	2,660	6,460	5,070	3,040	3,000	12,750	15,160	9,160	5,900
2.....	10,420	4,240	1,960	2,280	6,630	5,400	2,920	2,700	12,020	13,460	9,620	5,850
3.....	10,050	4,060	3,340	2,040	6,190	5,930	2,460	2,320	10,980	11,300	7,810	6,060
4.....	9,670	3,280	3,220	2,100	6,030	6,050	2,640	2,700	11,400	11,020	7,130	5,850
5.....	9,110	2,080	3,020	2,050	6,690	5,460	2,410	3,020	11,780	11,640	6,360	5,660
6.....	8,070	3,800	2,960	2,040	6,540	5,370	1,700	3,360	11,710	11,690	6,150	5,200
7.....	8,070	3,970	2,930	1,030	6,560	5,310	2,660	3,300	12,440	10,260	5,380	4,960
8.....	8,060	3,170	2,760	2,320	6,280	4,720	1,740	3,220	12,520	9,780	5,260	4,560
9.....	7,520	2,750	1,970	2,480	6,170	3,450	2,690	3,140	12,840	9,910	4,540	5,140
10.....	8,030	2,200	3,230	2,320	6,100	3,500	2,240	2,050	12,490	10,860	4,580	6,300
11.....	7,760	2,130	2,610	2,310	5,570	3,670	2,440	3,390	10,510	10,960	4,820	6,280
12.....	7,570	880	2,720	2,480	5,910	3,270	2,440	3,380	12,410	10,280	4,410	5,800
13.....	7,980	2,050	2,770	2,490	6,010	3,490	1,640	3,800	13,060	11,020	5,380	4,990
14.....	7,940	2,340	2,460	1,280	5,890	3,700	2,680	4,530	14,640	11,620	6,450	5,060
15.....	8,090	2,000	2,460	2,690	5,750	3,510	2,860	5,040	16,460	11,720	6,420	5,180
16.....	7,480	2,290	1,370	2,760	5,820	2,720	2,900	5,900	17,010	10,220	5,640	4,740
17.....	7,920	2,170	2,660	2,750	4,680	4,080	2,810	6,230	17,400	9,500	5,240	5,430
18.....	6,890	2,250	2,680	2,880	5,250	3,780	2,410	7,020	19,660	9,540	5,240	4,570
19.....	7,200	1,260	2,910	2,910	5,640	3,760	2,190	6,740	21,230	10,620	4,970	4,530
20.....	5,970	2,990	2,980	2,980	5,300	3,780	1,840	9,190	20,510	10,780	4,870	3,270

Daily discharge, in second-feet, of OSWEGO RIVER AT MINETTO, for the year ended June 30, 1918 — *Continued*

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
21.....	6,380	2,700	2,870	2,370	5,400	3,770	2,870	5,810	21,680	11,650	5,280	4,050
22.....	6,640	3,350	2,700	4,170	5,600	4,060	2,890	10,520	21,180	11,910	4,970	4,770
23.....	6,160	2,820	1,660	4,530	5,320	3,140	2,890	10,750	20,040	12,450	4,660	4,660
24.....	6,140	2,830	3,190	4,610	5,370	3,900	3,160	9,890	22,070	11,060	5,480	4,480
25.....	5,280	2,810	2,760	4,810	5,030	3,820	3,040	9,830	20,760	10,070	5,130	4,210
26.....	5,770	1,510	2,300	5,530	5,180	4,700	2,900	10,810	20,360	9,110	5,990	4,100
27.....	4,390	3,180	2,490	5,760	5,600	4,690	2,090	12,360	19,440	8,940	6,440	4,030
28.....	5,100	3,290	2,450	5,450	5,660	4,180	2,870	13,050	18,580	10,760	6,360	4,520
29.....	4,240	3,130	2,440	5,380	4,940	3,680	2,930	......	18,110	9,460	6,400	3,150
30.....	4,400	3,100	1,330	6,240	5,440	1,930	3,250	......	17,560	9,300	6,300	3,790
31.....	4,560	3,190	......	5,790	......	3,480	3,190	......	15,870	......	5,570	......
Mean...	7,188	2,783	2,608	3,274	5,767	4,109	2,606	5,966	16,113	10,868	5,871	4,903

Monthly discharge of OSWEGO RIVER AT MINETTO, for the year ended June 30, 1918

[Drainage area, 5,091 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	10,420	4,240	7,188	1.41	1.63
August	4,440	880	2,783	0.547	0.63
September	3,340	1,330	2,608	0.512	0.57
October	6,240	1,030	3,274	0.643	0.74
November	6,690	4,680	5,767	1.13	1.26
December	6,050	1,930	4,109	0.807	0.93
January	3,250	1,640	2,606	0.512	0.59
February	13,050	2,060	5,966	1.17	1.22
March	22,070	10,510	16,113	3.16	3.64
April	15,160	8,940	10,868	2.13	2.38
May	9,620	4,410	5,871	1.15	1.33
June	6,300	3,150	4,903	0.96	1.07
The year	22,070	880	6,005	1.18	15.99

OSWEGO RIVER AT NEW HIGH DAM, OSWEGO

High dam (old) with fixed crest at about elevation 281.8 has been removed above elevation 268.0, having been submerged by the pool formed by new High dam (dam No. 6) located about a mile farther downstream with fixed concrete ogee crest 500 feet long at elevation 290.0. The new pool was filled January 7, 1915.

Location.—At Barge canal dam No. 6, known as new High dam, just south of the city of Oswego and about 2 miles above the mouth of the Oswego river.

Drainage area.— 5,097 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— Water-surface elevation above and below, January 1, 1915, to June 30, 1018. Dicharge, January 7, 1915, to June 30, 1918.

Gages.—Above dam, until August 17, 1916, direct-reading staff on wing of east upper approach wall to lock No. 6, about 350 feet upstream from crest of dam. Since August 17, a standard Type B gage, No. 170, erected at the same location and having a range of 12 feet, between elevations 286.0 and 298.0. A standard bench-mark plug was set in the wall at elevation 296.0 (B. C. datum).

Below dam, until August 17, 1916, a direct-reading staff on wing of each lower approach wall to lock No. 6. Since August 17, a standard Type B gage, No. 169, erected at the same location and having a range of 12 feet, between elevations 265.0 and 277.0. A standard bench-mark plug was set in the face of the wall near the gage at elevation 274.0 (B. C. datum).

These gages are read twice daily to half-tenths—from May 16 to November 22 at 6 A. M. and 6 P. M., and from November 23 to May 15 at 8 A. M. and 4 P. M.

Discharge measurements.— Except the small amount required for canal purposes, the entire flow of the river ordinarily passes over the dam. Water used for canal purposes is included.

Control.— Crest, Barge canal lock No. 6 and bulkhead gates.

Extremes of discharge.— Current year: Maximum stage recorded, elevation 295.05 on March 18, at 6 P. M. and March 21 at 6 A. M.; discharge, 22,500 second-feet. Minimum stage recorded, elevation 290.9 on August 12 and September 30 at 6 P. M.; discharge, 1,460 second-feet.

1915–1918: Maximum stage recorded, elevation 296.3 on April 3, 4 and 5, 1916; discharge, 31,400 second-feet. Minimum stage recorded, elevation 287.2 on December 16, 1915, at 10 A. M.

Regulation.— By the large number of lakes in the drainage area and by pondage at Fulton and Phoenix.

Accuracy.— The one or two daily readings are not a sufficient basis for accurate discharge estimates, owing to the fluctuation of flow caused by pondage and industrial wheels at Fulton and

Phoenix. It is believed that the estimated discharge at this station is too high and that those obtained at Minetto, while possibly a little low, are nearer correct.

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER ABOVE NEW HIGH DAM, OSWEGO, for the year ended June 30, 1918. James R. Kelly, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	293.68	292.08	291.90	291.62	293.00	292.40	291.60	291.78	294.00	294.10	293.40	292.75
2.....	293.72	291.95	291.45	291.85	293.10	292.30	291.72	291.60	293.88	293.90	293.28	292.55
3.....	293.62	291.98	291.90	291.45	292.92	292.62	291.55	291.40	293.58	293.52	293.12	292.60
4.....	293.55	291.85	291.82	291.40	292.92	292.62	291.58	291.48	293.75	293.48	292.90	292.50
5.....	293.45	291.62	291.75	291.55	293.05	292.42	291.20	291.82	293.82	293.75	292.65	292.42
6.....	293.40	291.92	291.82	291.38	292.98	292.42	291.15	291.90	293.78	293.48	292.78	292.35
7.....	293.15	291.95	291.80	291.12	292.98	292.55	291.50	291.90	293.95	293.20	292.55	292.28
8.....	293.12	291.72	291.78	291.35	292.80	292.35	291.50	291.98	293.92	293.52	292.50	292.22
9.....	293.02	291.70	291.68	291.68	292.80	291.95	291.68	291.78	294.08	293.60	292.48	292.42
10.....	293.28	291.52	291.92	291.50	292.65	292.25	291.48	291.28	293.85	293.70	292.45	292.52
11.....	293.10	291.50	291.65	291.60	292.62	292.25	291.55	292.00	293.75	293.65	292.25	292.75
12.....	293.18	291.05	291.72	291.65	292.48	291.80	291.45	291.65	294.10	293.80	291.88	292.50
13.....	293.22	291.62	291.78	291.52	292.55	291.95	291.05	292.05	294.15	293.82	292.50	292.35
14.....	293.22	291.40	291.58	291.40	292.60	292.10	291.80	292.25	294.52	293.55	292.82	292.30
15.....	293.25	291.58	291.62	291.55	292.75	291.90	291.78	292.40	294.68	293.78	293.00	292.45
16.....	293.12	291.62	291.32	291.90	292.50	291.45	291.80	292.55	294.75	293.62	292.58	292.32
17.....	293.22	291.48	291.52	291.88	292.20	291.62	291.82	292.45	294.75	293.52	292.55	292.55
18.....	292.98	291.65	291.78	291.80	292.42	291.95	291.45	292.90	295.00	293.48	292.48	292.38
19.....	292.92	291.30	291.85	291.75	292.40	291.90	291.50	292.82	294.98	293.68	292.30	292.20
20.....	293.20	291.58	291.85	291.75	292.50	291.90	291.25	293.25	295.00	293.75	292.45	291.85
21.....	292.62	291.80	291.88	291.65	292.45	291.80	292.18	293.42	295.02	293.70	292.40	292.05
22.....	292.45	291.55	291.82	292.20	292.50	292.05	291.78	293.52	294.98	294.00	292.42	292.32
23.....	292.78	291.70	291.48	292.42	292.25	291.42	291.80	293.55	294.92	293.92	292.50	292.20
24.....	292.70	291.72	291.82	292.45	292.35	292.05	291.98	293.40	294.75	293.70	292.60	292.32
25.....	292.58	291.78	291.78	292.42	292.12	291.88	291.75	293.45	294.90	293.55	292.50	292.25
26.....	292.72	291.32	291.62	292.78	292.55	292.45	291.75	293.65	294.80	293.52	292.82	292.05
27.....	292.35	291.75	291.70	292.78	292.58	292.25	291.10	293.95	294.70	293.30	292.68	292.10
28.....	292.22	291.88	291.60	292.52	292.60	292.00	291.65	294.02	294.55	293.18	292.82	292.12
29.....	292.48	291.85	291.70	292.62	292.32	291.98	291.80	......	294.50	293.48	292.80	291.85
30.....	292.20	291.85	291.20	293.08	292.62	291.15	291.90	......	294.45	293.45	292.78	292.05
31.....	292.25	291.90	......	292.85	......	291.70	291.88	......	294.30	......	292.45	......

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER BELOW NEW HIGH DAM, OSWEGO, for the year ended June 30, 1918. James R. Kelly, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	271.90	270.00	270.02	269.42	270.80	270.20	269.48	269.22	272.00	272.08	271.22	270.58
2.....	271.78	269.98	269.55	269.60	271.12	270.45	269.30	268.95	271.98	271.85	271.08	270.60
3....	271.60	269.78	270.12	269.25	271.00	270.42	268.68	269.22	271.75	271.40	270.92	270.50
4.....	271.75	269.78	269.98	269.82	271.20	270.45	268.92	268.88	271.62	271.38	270.72	270.25
5.....	271.55	269.65	269.90	269.00	271.10	270.28	267.52	269.58	271.72	271.62	270.65	270.12
6.....	271.42	269.95	269.78	269.08	270.92	270.28	268.98	269.60	271.68	271.40	270.45	270.05
7.....	271.35	269.85	269.92	269.00	270.92	270.30	268.50	269.48	271.85	271.35	270.20	270.08
8.....	271.38	269.58	270.00	269.25	270.72	270.00	268.40	269.55	271.85	271.30	270.20	270.02
9.....	271.00	269.70	269.75	269.50	270.72	269.80	268.95	269.42	272.08	271.40	270.10	270.38
10.....	271.25	269.18	269.88	269.12	270.60	270.10	268.60	269.08	272.05	271.65	270.05	270.45
11.....	271.10	269.30	269.60	269.15	270.75	270.10	268.70	269.58	271.65	271.60	269.90	270.58
12.....	271.15	268.95	269.58	269.30	270.50	269.30	268.25	268.82	272.08	271.65	269.80	270.35
13.....	271.10	269.65	269.68	269.25	270.38	269.50	268.52	269.50	272.20	271.70	270.20	270.08
14.....	271.35	269.00	269.32	269.25	270.48	269.60	269.15	269.62	272.55	271.72	270.48	269.95
15.....	271.42	269.52	269.65	269.30	270.58	269.60	269.10	270.10	272.65	271.68	270.70	270.22

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER BELOW NEW HIGH DAM, OSWEGO, for the year ended June 30, 1918. James R. Kelley, Observer — *Continued*

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
16.....	271.25	269.48	269.28	269.72	270.32	269.35	269.30	270.30	272.90	271.48	270.40	270.28
17.....	271.20	269.35	269.40	269.70	270.08	269.60	269.20	270.50	273.10	271.40	270.40	270.35
18.....	270.92	269.55	269.58	269.55	270.40	269.40	268.55	270.68	273.15	271.35	270.25	270.18
19.....	270.80	269.30	269.52	269.48	270.38	269.42	268.95	270.58	273.18	271.50	270.30	269.95
20.....	270.55	269.52	269.52	269.52	270.35	269.38	268.78	271.05	273.18	271.62	270.32	269.50
21.....	270.82	269.60	269.65	269.65	270.20	269.38	269.40	271.22	273.22	271.90	270.12	269.78
22.....	271.10	269.68	269.65	269.65	270.20	269.68	269.05	271.40	273.22	271.95	270.15	270.15
23.....	270.82	269.52	268.88	269.82	270.00	269.32	269.20	271.48	273.15	271.80	270.25	270.18
24.....	270.75	269.55	269.70	270.32	270.20	269.68	269.38	271.55	273.15	271.50	270.28	270.12
25.....	270.48	269.80	269.60	270.28	270.22	269.85	269.10	271.28	273.02	271.35	270.28	269.98
26.....	270.42	269.58	269.42	270.75	270.30	270.08	269.05	271.55	272.95	271.30	270.85	269.60
27.....	270.48	270.05	269.32	270.82	270.40	270.00	268.95	271.90	272.85	271.05	270.52	269.85
28.....	270.22	269.95	269.25	270.85	270.30	269.60	269.05	272.08	272.60	271.25	270.58	269.72
29.....	270.55	270.00	269.45	270.72	270.45	269.55	269.00	......	272.55	271.35	270.52	269.60
30.....	270.18	269.95	269.20	270.80	270.38	268.95	269.38	......	272.50	271.28	270.78	270.05
31.....	270.10	270.10	......	270.80	......	269.28	269.32	......	272.55	......	270.25	......

Daily discharge, in second-feet, of OSWEGO RIVER AT NEW HIGH DAM, OSWEGO, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	13,900	5,640	4,880	3,800	10,100	7,090	3,710	4,400	15,800	16,400	12,300	8,790
2.....	14,100	5,100	3,380	4,700	10,600	6,620	4,170	3,710	15,100	15,200	11,600	7,810
3.....	13,500	5,220	4,900	3,200	9,690	8,150	3,530	3,000	13,300	13,000	10,700	8,050
4.....	13,100	4,700	4,570	3,010	9,680	8,150	3,640	3,280	14,300	12,700	9,560	7,560
5.....	12,600	3,780	4,280	3,540	10,400	7,180	2,340	4,560	14,700	14,300	8,290	7,180
6.....	12,300	4,980	4,560	2,950	9,990	7,180	2,180	4,890	14,500	12,700	8,940	6,860
7.....	10,900	5,110	4,480	2,100	10,000	7,800	3,350	4,890	15,500	11,200	7,800	6,530
8.....	10,700	4,170	4,400	2,840	9,070	6,860	3,350	5,220	15,300	13,000	7,560	6,260
9.....	10,200	4,100	4,020	4,030	9,060	5,090	4,010	4,400	16,300	13,400	7,470	7,180
10.....	11,600	3,430	4,970	3,360	8,320	6,400	3,280	2,600	14,900	14,000	7,320	7,660
11.....	10,600	3,350	3,900	3,720	8,160	6,400	3,530	5,300	14,300	13,700	6,400	8,800
12.....	11,100	1,890	4,170	3,910	7,500	4,480	3,170	3,900	16,400	14,600	4,800	7,570
13.....	11,300	3,790	4,420	3,430	7,820	5,090	1,880	5,520	16,700	14,700	7,560	6,860
14.....	11,300	3,010	3,650	3,010	8,080	5,730	4,480	6,400	19,000	13,100	9,150	6,630
15.....	11,400	3,640	3,800	3,540	8,820	4,890	4,400	7,090	20,000	14,500	10,100	7,340
16	10,700	3,800	2,720	4,900	7,600	3,170	4,480	7,800	20,500	13,500	7,950	6,720
17.....	11,300	3,280	3,420	4,820	6,200	3,790	4,560	7,320	20,500	13,000	7,800	7,810
18.....	9,980	3,900	4,400	4,500	7,210	5,090	3,170	9,560	22,100	12,700	7,470	7,000
19.....	9,670	2,670	4,690	4,300	7,120	4,890	3,350	9,150	22,000	13,900	6,630	6,180
20.....	11,200	3,640	4,680	4,310	7,580	4,890	2,500	11,400	22,100	14,300	7,320	4,680
21.....	8,510	4,480	4,800	3,930	7,340	4,480	6,080	12,400	22,300	14,000	7,090	5,520
22.....	8,130	3,530	4,560	6,190	7,580	5,520	4,400	13,000	22,000	15,800	7,190	6,720
23.....	8,950	4,090	3,280	7,200	6,420	3,060	4,480	13,100	21,600	15,300	7,560	6,170
24.....	8,550	4,190	4,560	7,340	6,870	5,520	5,220	12,300	20,500	14,000	8,050	6,720
25.....	7,960	4,400	4,410	7,200	5,840	4,800	4,280	12,600	21,500	13,100	7,560	6,400
26.....	8,640	2,720	3,800	8,970	7,820	7,320	4,280	13,700	20,800	13,000	9,150	5,520
27.....	6,860	4,270	4,100	8,970	7,960	6,400	2,030	15,500	20,200	11,700	8,440	5,730
28.....	6,270	4,800	3,710	7,670	8,060	5,300	3,900	15,900	19,200	11,100	9,150	5,830
29.....	7,470	4,670	4,090	8,160	6,730	5,220	4,480	......	18,900	12,700	9,050	4,690
30.....	6,180	4,670	2,360	10,530	8,160	2,180	4,890	......	18,600	12,600	8,950	5,520
31.....	6,400	4,880	......	9,320	......	4,090	4,800	......	17,600	......	7,320	......
Mean...	10,173	4 061	4,132	5,144	8,193	5,575	3,804	7,960	18,274	13,570	8,265	6,743

Monthly discharge of OSWEGO RIVER AT NEW HIGH DAM, OSWEGO, for the year ended June 30, 1918

[Drainage area, 5,097 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	14,100	6,180	10,173	2.00	2.30
August	5,640	1,890	4,061	0.797	0.92
September	4,970	2,360	4.132	0.811	0.90
October	10,530	2,100	5,144	1.01	1.16
November	10,600	5,840	8,193	1.61	1.79
December	8,150	2,180	5,575	1.09	1.26
January	6,080	1,880	3,804	0.746	0.86
February	15,900	2,600	7,960	1.56	1.63
March	22,300	13,300	18,284	3.58	4.12
April	16,400	11,100	13,570	2.66	2.97
May	12,300	4,800	8,265	1.62	1.87
June	8,800	4,680	6,743	1.32	1.48
The year	22,300	1,880	7,990	1.568	21.26

OSWEGO RIVER ABOVE CURVED DAM, OSWEGO

The record heretofore published as "Oswego River above Curved Dam" is that obtained at gage No. 2 on the west side of the river. This gage was established April 7, 1904, and until December 10, 1916, consisted of a staff gage secured to the north face of the third pier south of, and part of, the upper approach to the Varick canal lock at the west end of the curved dam at Oswego. Since December 12, 1916, a standard Type A gage in the same location has been used. This gage has a range of 10 feet, between elevations 266.0 and 276.0 (B. C. datum), and is read once daily. It indicates the water-surface about 100 feet above the dam.

This gage should not be confused with the gage at the east end of the dam, whose record is published as "Oswego River, East Side, above Curved Dam, Oswego."

This gage is read once daily — at 8 A. M. — to tenths, with occasional readings to half-tenths.

Daily elevation of water-surface (B. C. datum) of Oswego River, above Curved Dam, Oswego, for the year ended June 30, 1918. D. D. Tompkins, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	271.8	270.0	270.1	269.1	270.9	270.4	269.7	269.4	271.9	272.0	271.0	270.0
2.....	271.7	269.85	269.6	269.2	271.0	270.4	269.4	269.3	271.7	271.8	271.0	270.4
3.....	271.7	270.0	270.4	269.0	271.1	270.4	268.0	269.1	271.8	271.4	270.8	270.1
4.....	271.7	269.45	270.4	268.9	271.0	270.5	268.3	269.0	271.5	271.4	270.6	270.3
5.....	271.5	269.2	270.1	269.0	270.9	270.4	267.0	269.5	271.7	271.5	270.9	270.1
6.....	271.2	269.9	270.1	269.0	271.0	270.3	268.5	269.7	271.8	271.5	270.3	270.0
4.....	271.2	269.55	270.0	268.1	271.0	270.3	268.5	269.7	271.8	271.5	270.1	269.9
8.....	271.7	269.9	269.9	268.7	270.8	270.1	267.4	269.6	271.8	271.7	270.0	269.7
9.....	270.75	269.9	269.6	268.9	270.8	270.0	268.6	269.7	271.9	271.7	270.0	270.0
10.....	270.95	268.6	269.5	268.9	270.8	269.3	268.8	269.5	272.2	271.6	269.9	270.1
11.....	271.9	269.15	269.0	269.4	270.9	269.4	269.0	269.5	271.4	271.7	269.8	270.3
12.....	270.0	269.1	269.5	269.4	270.6	268.7	269.1	268.2	272.0	271.6	270.2	270.3
13.....	271.1	268.0	269.5	269.5	270.6	269.4	269.0	269.3	272.0	271.7	269.9	269.9
14.....	271.0	269.4	269.3	268.9	270.5	269.5	269.0	269.6	272.4	271.8	270.3	269.6
15.....	271.5	269.25	269.5	269.3	270.5	269.3	269.1	269.8	272.7	271.9	270.7	269.9
16.....	270.9	269.25	269.2	269.4	270.5	269.3	269.1	270.2	272.9	271.9	270.3	269.7
17.....	271.1	269.0	269.25	269.4	270.4	269.3	268.7	270.4	273.1	271.5	270.1	269.7
18.....	270.9	269.1	269.4	269.3	270.3	269.8	268.9	270.4	273.3	271.4	269.9	269.4
19.....	270.65	269.1	269.45	269.4	270.3	269.8	268.9	270.5	273.4	271.5	270.0	269.5
20.....	270.65	269.15	269.4	269.4	270.3	270.0	268.7	270.9	273.3	271.8	270.0	269.1
21.....	270.65	269.0	269.5	269.4	270.3	269.8	268.9	271.2	273.3	271.8	270.0	269.4
22.....	271.2	269.4	269.4	270.0	270.5	269.7	269.1	271.3	273.3	272.0	270.0	269.5
23.....	270.6	269.5	268.0	270.1	270.2	269.5	269.4	271.4	273.3	272.0	270.0	269.8
24.....	270.4	269.5	269.5	270.4	270.5	269.5	269.4	271.5	273.2	271.7	270.0	269.6
25.....	270.4	269.2	269.3	270.5	270.5	269.7	269.4	271.1	273.0	271.4	270.0	269.4
26.....	270.4	269.55	269.0	270.5	270.2	269.6	269.4	271.8	273.0	271.4	270.7	269.2
27.....	270.25	270.2	269.2	270.8	270.5	270.3	269.5	271.7	272.9	271.0	270.2	269.5
28.....	269.9	270.2	269.1	270.6	270.6	269.6	269.0	272.0	272.7	271.3	270.1	269.5
29.....	270.3	270.3	268.9	270.6	270.5	269.7	269.2	......	272.5	271.0	270.4	269.5
30.....	270.0	270.1	268.0	270.9	270.3	269.0	269.2	......	272.5	271.2	270.9	270.0
31.....	269.9	270.0	......	270.7	......	269.5	269.3	......	272.7	......	270.0	......

OSWEGO RIVER, EAST SIDE, ABOVE CURVED DAM, OSWEGO

This gage was established December, 1907, as gage L of the Oswego specials. The gage was originally a reference point, elevation 275.56, located at the east end of the curved dam on the upstream face of the abutment about twenty-five feet from the end of the crest. On August 16, 1916, a standard Type A gage, No. 168, was erected at the south end of the upper east gate recess of lock No. 7. It has a range of 8 feet, between elevations 267.0 and 275.0. A standard bench-mark plug was set in the wall near the gage at elevation 275.0 (B. C. datum).

This gage should not be confused with the gage on the west side of the river, the record of which is published as "Oswego River above Curved Dam, Oswego."

The gage is read twice daily to half-tenths — between May 16 and November 18 at 6 A. M. and 6 P. M., between November 19 and May 15 at 8 A. M. and 4 P. M.

Daily elevation of water-surface (B. C. datum) of OSWEGO RIVER, EAST SIDE, ABOVE CURVED DAM, OSWEGO, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	271.94	269.98	270.04	269.69	271.02	270.25	269.50	269.00	272.00	272.22	271.25	270.65
2.....	271.85	270.00	269.54	269.38	271.10	270.55	269.55	268.80	271.90	272.00	271.20	270.70
3.....	271.64	269.82	270.12	269.16	271.08	270.42	267.95	269.15	271.88	271.50	270.90	270.50
4.....	271.80	269.80	270.20	269.32	271.12	270.45	269.22	268.82	271.70	271.42	270.80	270.45
5.....	271.40	269.45	269.94	269.14	271.11	270.25	268.20	269.52	271.82	271.70	270.80	270.15
6.....	271.38	269.85	269.94	269.14	271.02	270.22	269.10	269.62	271.80	271.45	270.30	270.10
7.....	271.44	269.81	269.92	268.95	270.98	270.32	269.15	269.50	271.90	271.62	270.25	270.05
8.....	271.48	269.50	270.00	269.45	270.81	269.95	267.85	269.45	271.92	271.35	270.05	270.20
9.....	271.10	269.44	269.74	269.25	270.70	270.00	269.00	269.45	272.15	271.50	270.00	270.35
10.....	271.18	269.35	269.79	269.16	270.68	270.00	268.55	268.95	272.12	271.65	269.90	270.50
11.....	271.20	269.29	269.56	269.24	270.69	270.00	268.58	269.55	271.65	271.60	269.90	270.55
12.....	271.18	268.91	269.54	269.34	270.59	269.30	267.80	268.98	272.18	271.70	270.05	270.20
13.....	271.22	269.05	269.75	269.32	270.42	269.50	268.50	269.72	272.25	271.75	270.10	270.00
14.....	271.30	269.18	269.42	268.81	270.50	269.55	269.05	269.80	272.70	271.85	270.45	270.00
15.....	271.46	268.95	269.65	269.59	270.46	269.65	269.05	270.18	272.90	271.80	270.70	270.75
16.....	271.19	269.12	269.04	269.60	270.04	269.35	269.20	270.28	273.05	271.45	270.20	270.40
17.....	271.24	269.30	269.58	269.46	270.20	269.45	268.78	270.65	273.22	271.40	270.50	270.20
18.....	270.95	269.44	269.30	269.51	270.63	269.42	268.65	270.65	273.30	271.50	270.25	270.15
19.....	270.92	269.20	269.52	269.60	270.40	269.42	268.85	270.68	273.25	271.60	270.40	270.00
20.....	270.95	269.64	269.55	269.57	270.45	269.55	268.93	271.12	273.25	271.60	270.15	269.35
21.....	270.89	269.60	269.58	269.68	270.37	269.50	269.18	271.30	273.30	271.90	270.10	269.50
22.....	271.09	269.58	269.65	270.20	270.30	269.65	269.15	271.48	273.25	272.00	270.05	269.90
23.....	270.74	269.42	269.00	270.31	270.20	269.30	268.95	271.52	273.28	271.80	270.25	270.25
24.....	270.41	269.48	269.48	270.29	270.25	269.65	269.40	271.60	273.22	271.65	270.55	270.15
25.....	270.48	269.80	269.55	270.25	270.28	270.08	269.20	271.35	273.15	271.50	270.25	269.70
26.....	270.58	269.32	269.28	270.78	270.38	269.90	269.12	271.60	273.08	271.40	270.80	269.75
27.....	270.11	270.02	269.26	270.86	270.30	269.75	269.00	271.90	272.90	271.25	270.65	269.70
28.....	270.38	270.10	269.25	270.72	270.35	269.65	268.95	272.18	272.70	271.35	270.40	269.80
29.....	270.18	269.99	269.50	270.75	270.35	269.65	269.00	......	272.62	271.40	270.65	269.65
30....	269.98	270.02	268.99	270.84	270.32	269.00	269.20	......	272.60	271.25	270.80	270.10
31.....	270.16	269.95	......	270.96	......	269.55	269.10	......	272.68	......	270.40	......

LAKE ONTARIO AT MOUTH OF OSWEGO RIVER

This gaging station is located in the mouth of the Oswego river in the harbor at Oswego and indicates very closely the lake level, except during times of large flow in the Oswego river, when there will be some slight slope below the gage. It was established December, 1907, and was located on the east side of the river below Bridge street bridge, the bridge nearest the lake. The lower gage in new lock No. 8 was used until August 11, 1916. On August 11, 1916, a standard Type A gage, No. 166, was erected on the end of lower east approach wall to lock No. 8. It has a range of 4 feet, between elevations 247.0 and 251.0. A standard bench-mark plug was set in the wall near the gage at elevation 249.05 (B. C. datum).

This gage is read to half-tenths, from May 19 to November 21, four times daily, and from November 22 to May 18, twice daily.

Daily elevation of water-surface (B. C. datum) of LAKE ONTARIO AT MOUTH OF OSWEGO RIVER, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	248.38	248.55	247.89	247.80	247.80	247.60	247.42	247.02	247.80	248.25	248.35	248.11
2.....	248.42	248.56	247.89	247.79	247.88	247.60	247.40	246.92	247.72	248.38	248.35	248.11
3.....	248.40	248.51	247.90	247.72	247.86	247.65	247.35	247.10	247.68	248.38	248.25	248.12
4.....	248.39	248.54	247.91	247.75	247.76	247.60	247.30	247.05	247.68	248.30	248.28	248.14
5.....	248.38	248.58	247.92	247.74	247.88	247.80	247.30	246.98	247.65	248.25	248.22	248.12
6.....	248.39	248.49	247.96	247.85	247.94	247.80	247.42	247.02	247.78	248.20	248.22	248.25
7.....	248.34	248.45	247.90	247.75	247.94	247.70	247.28	246.92	247.75	248.20	248.25	248.30
8.....	248.34	248.36	247.94	247.71	247.94	247.32	247.38	246.98	247.80	248.25	248.20	248.15
9.....	248.44	248.42	247.90	247.79	247.94	247.45	247.45	247.00	247.82	248.38	248.32	248.10
10.....	248.46	248.49	247.95	247.78	247.92	247.30	247.50	247.02	247.68	248.35	248.08	248.11
11.....	248.49	248.45	247.91	247.74	247.89	247.42	247.48	246.98	247.70	248.25	248.00	248.09
12.....	248.48	248.44	247.89	247.66	247.85	247.52	247.52	247.00	247.88	248.30	248.12	248.24
13.....	248.50	248.41	247.90	247.76	247.81	247.40	247.55	247.08	247.75	248.38	248.20	248.21
14.....	248.49	248.46	247.82	247.69	247.79	247.90	247.45	247.05	247.92	248.28	248.22	248.15
15.....	248.52	248.31	247.86	247.61	247.70	247.88	247.15	247.48	248.00	248.32	248.30	248.11
16.....	248.55	248.15	247.86	247.60	247.78	247.75	247.22	247.00	248.05	248.35	248.25	248.19
17.....	248.55	248.12	247.85	247.61	247.72	247.42	247.22	247.00	247.98	248.35	248.22	248.11
18.....	248.56	248.11	247.80	247.61	247.70	247.40	247.02	247.22	248.10	248.40	248.22	248.14
19.....	248.59	248.18	247.82	247.66	247.70	247.48	247.05	247.30	248.12	248.40	248.12	248.14
20.....	248.60	248.10	247.81	247.62	247.60	247.52	247.22	247.72	248.18	248.42	248.14	248.11
21.....	248.48	248.15	247.80	247.60	247.65	247.60	247.30	247.58	248.22	248.38	248.18	248.09
22.....	248.59	248.08	247.81	247.59	247.60	247.58	247.00	247.45	248.28	248.50	248.10	248.09
23.....	248.52	248.02	247.81	247.55	247.62	247.52	247.22	247.62	248.32	248.52	248.18	248.09
24.....	248.59	248.04	247.79	247.50	247.75	247.48	246.78	247.70	248.28	248.50	248.16	248.08
25.....	218.58	248.05	247.72	247.60	247.70	247.48	247.10	247.40	248.32	248.45	248.18	248.00
26.....	248.51	248.08	247.70	247.65	247.68	247.50	247.25	247.78	248.40	248.38	248.06	248.10
27.....	248.55	248.02	247.68	247.66	247.58	247.42	247.00	247.70	248.40	248.32	248.12	248.00
38.....	248.54	248.05	247.74	247.69	247.65	247.58	246.88	247.92	248.32	248.30	248.22	247.88
29.....	248.56	248.02	247.75	247.72	247.62	247.45	247.15	......	248.25	248.35	248.16	247.96
30.....	248.61	248.00	247.80	247.85	247.65	247.40	247.05	......	248.28	248.30	248.14	247.92
21.....	248.56	247.98	......	247.81	......	247.35	247.12	......	248.22	......	248.09	......

SENECA RIVER BASIN

DESCRIPTION

Seneca river receives the drainage from the central group of lakes lying southward from Lake Ontario, known as the finger lakes. The drainage basin is rolling, though not precipitous, excepting for the deep narrow valleys crossing it, in which the lakes are situated, and certain additional valleys not at the present time occupied by lakes. All of the lakes properly belonging to the finger lake system do not drain into the Seneca river. Oneida lake on the east is tributary to Oneida river, while on the west of the Seneca river there is a series of lakes, including Honeoye, Canadice, Hemlock and Conesus lakes, smaller than, but parallel with and otherwise similar to the main finger lakes, which are tributary to Genesee river. The upper lakes of the system in the Seneca river basin are Onondaga, Otisco, Skaneateles, Owasco, Cayuga, Seneca, Keuka and Canandaigua lakes.

For table of drainage areas see page 65.

SENECA RIVER

DESCRIPTION

The stream designated as Seneca river originates at the outlet of Seneca lake, flows easterly into the foot of Cayuga lake and then northerly through the extensive Montezuma marshes to a point near Savannah, where it leaves the broad marsh area and turns easterly, passing to the north of Syracuse and receiving Onondaga outlet, then turning northerly and joining Oneida river at Three River Point to form the Oswego river. This river has been canalized for the Barge canal throughout its entire length. The construction of five dams and the necessary dredging has resulted in a series of navigable pools having low navigable water-surfaces referred to Barge canal datum as follows:

Above Three River Point due to the dam at Phoenix on the Oswego river, Elev. 363.0; above Baldwinsville, Elev. 374.0; above foot of Cayuga lake, Elev. 381.5; above Seneca Falls, Elev. 430.5; above Waterloo, Elev. 445.0.

The most important tributaries of Seneca river are the outlets of Onondaga, Otisco, Skaneateles and Owasco lakes, and Clyde river, which enters the Seneca river near Clyde and which in turn is formed by the junction of Ganargua creek, often called Mud creek, and Canandaigua outlet at Lyons.

The following tables show the daily elevation of water-surface at different gages maintained on Seneca river during the year ended June 30, 1918, exclusive of those on Seneca and Cayuga lakes, which are given separately.

SENECA RIVER ABOVE DAM, WATERLOO

This station is located above the new Barge canal lock No. 4, in the village of Waterloo. The new dam, or regulating works, consisting of six Taintor gates, each having a clear span of 36 feet, three with sills at elevation 439.0 and three at elevation 435.0, is located immediately below and replaces the old fixed dam. The three larger openings can pass water only to the power-plant of the Tracy Development Company. The low navigable surface above this dam is elevation 445.0.

The concrete staff gage in the upper end of the lock is read twice daily — at 8 A. M. and 4 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER ABOVE DAM AT WATERLOO, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan	Feb.	Mar.	April	May	June
1.....	446.55	446.9	446.9	446.1	446.7	446.2	445.8	444.05	444.7	446.0	446.4	446.9
2.....	446.45	446.9	446.95	446.15	446.65	446.55	445.4	444.05	444.9	446.0	446.5	446.85
3.....	446.2	446.8	446.9	445.95	446.8	446.1	444.95	444.55	445.0	445.95	446.45	446.55
4.....	446.65	447.0	446.7	446.1	446.9	446.1	445.15	444.0	444.8	445.95	446.6	446.4
5.....	446.5	446.95	446.75	446.05	446.6	446.05	445.3	444.0	444.85	446.0	446.75	446.4
6.....	446.4	446.8	446.75	446.25	446.75	446.05	445.5	443.5	445.05	446.05	446.45	446.4
7.....	446.55	446.8	446.5	446.5	446.55	446.2	445.0	443.95	445.1	446.25	446.4	446.35
8.....	446.6	446.75	446.9	446.0	446.65	446.1	445.1	443.2	445.0	445.95	446.35	446.55
9.....	446.5	446.75	446.95	446.0	446.45	446.3	445.05	443.85	445.05	445.9	446.4	446.35
10.....	446.5	446.65	446.7	445.9	446.7	445.9	444.85	444.45	445.05	445.9	446.45	446.35
11.....	446.55	446.9	446.7	445.9	446.8	445.85	444.95	443.75	445.15	446.0	446.5	446.4
12.....	446.55	446.9	446.75	445.95	446.45	445.85	445.25	444.7	445.15	446.15	446.7	446.4
13.....	446.6	446.5	446.7	446.15	446.55	445.8	445.55	444.5	445.35	446.25	446.4	446.4
14.....	446.85	446.9	446.6	446.35	446.45	445.9	444.7	444.3	446.15	446.35	446.5	446.4
15.....	446.9	446.9	446.65	445.85	446.4	446.0	444.95	444.45	446.0	446.35	446.8	445.95
16.....	446.8	446.85	446.75	445.9	446.5	446.4	444.9	444.55	446.15	446.3	446.6	446.4
17.....	446.8	446.95	446.4	445.8	446.55	445.15	444.85	444.85	446.35	446.2	446.55	446.4
18.....	446.8	446.95	446.4	445.9	446.75	445.15	444.5	443.75	446.0	446.5	446.5	446.35
19.....	446.85	447.2	446.5	445.9	446.35	445.0	445.5	444.1	445.9	446.4	446.7	446.5
20.....	446.85	447.0	446.55	446.15	446.35	445.0	445.4	444.85	445.95	446.65	446.5	446.35
21.....	446.85	446.85	446.45	446.25	446.35	444.6	445.4	444.4	446.05	446.75	446.65	446.3
22.....	446.85	446.85	446.6	445.8	446.35	445.5	445.25	444.5	446.05	446.6	446.6	446.55
23.....	446.8	446.75	446.8	445.8	446.4	445.9	444.7	444.45	446.15	446.6	446.6	446.6
24.....	446.8	446.75	446.3	445.85	446.5	445.65	444.7	444.85	446.45	446.65	446.75	446.85
25.....	446.85	446.95	446.35	446.5	446.7	445.95	445.2	444.5	446.1	446.5	446.65	446.1
26.....	446.8	447.0	446.25	446.4	446.45	445.6	444.8	444.95	446.05	446.5	446.65	446.15
27.....	446.75	446.75	446.2	446.7	446.35	445.65	444.05	444.65	446.0	446.6	446.65	446.85
28.....	446.9	446.55	446.25	446.7	446.2	445.4	444.15	444.4	446.0	446.65	446.65	446.2
29.....	447.1	446.75	446.3	446.6	446.55	445.7	444.1	......	446.1	446.45	446.45	446.5
30.....	446.95	446.8	446.6	446.8	446.25	445.8	444.1	......	446.2	446.4	446.95	446.45
31.....	446.9	446.6	......	446.75	......	445.5	444.15	......	446.45	......	446.6	......

SENECA RIVER BELOW LOCK No. 4, WATERLOO

This station is located just below the new Barge canal lock No. 4, in the village of Waterloo.

The concrete staff gage in the lower end of the lock is read. The water-surface indicated is that of the Seneca river about 2,000 feet above the gage formerly read below old lock No. 2 at the junction of the old canal and the river.

The gage is read twice daily — at 8 A. M. and 4 P. M.— to tenths.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER BELOW LOCK No. 4, WATERLOO, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	428.9	430.8	431.0	430.75	431.1	430.9	430.3	430.9	430.25	430.65	430.45	430.45
2.....	429.65	430.85	430.55	431.1	431.15	430.8	430.95	430.65	430.55	430.85	430.75	431.25
3.....	429.2	431.0	430.8	430.85	430.95	430.8	430.85	431.2	430.6	431.1	430.6	431.25
4.....	428.75	430.75	431.05	430.75	430.2	430.75	430.9	431.0	431.1	430.5	430.5	431.0
5.....	427.9	430.25	430.9	430.7	431.2	430.45	431.05	429.9	430.3	430.7	430.1	431.3
6.....	431.0	430.45	430.85	430.8	431.05	430.8	430.0	430.15	431.0	431.05	430.95	430.95
7.....	431.3	430.95	431.05	431.3	431.05	430.15	430.65	430.1	430.95	430.55	430.05	430.8
8.....	431.4	431.0	430.8	431.05	430.95	430.45	430.1	430.45	430.8	430.8	430.5	431.25
9.....	430.85	430.65	430.95	431.15	430.8	430.5	429.95	431.3	430.25	431.0	430.5	430.9
10.....	431.2	431.0	431.2	431.05	431.35	430.55	430.65	431.3	430.25	431.2	430.5	431.1
11.....	430.5	430.8	430.85	431.15	431.2	430.0	430.2	431.15	430.3	431.0	430.85	430.85
12.....	430.85	430.95	431.2	431.05	431.35	430.65	430.65	430.1	431.05	430.95	430.8	430.95
13.....	430.65	431.2	430.95	431.2	431.3	430.5	430.3	431.35	431.0	430.5	430.8	430.95
14.....	430.95	431.1	431.25	430.95	431.2	430.4	430.7	430.1	430.55	430.2	430.55	430.9
15.....	430.75	430.85	431.2	431.0	431.4	430.1	430.5	431.05	430.5	430.35	430.65	431.0
16.....	431.0	431.3	430.2	430.85	431.6	430.6	431.0	431.05	430.7	430.25	430.95	430.95
17.....	430.8	430.85	431.2	430.75	431.25	431.7	430.75	430.55	430.55	430.5	431.2	430.8
18.....	430.95	430.8	431.05	430.25	430.55	431.85	430.45	430.1	430.6	431.35	430.8	431.0
19.....	431.05	430.85	431.05	430.8	430.6	431.6	430.4	430.6	430.15	430.3	430.85	431.25
20.....	430.55	431.0	431.2	431.2	431.0	431.5	431.3	430.85	430.5	430.8	431.0	430.95
21.....	430.45	431.1	430.9	430.2	430.9	431.5	430.15	429.95	430.85	430.25	431.35	431.05
22.....	431.2	430.8	431.0	430.85	431.1	430.65	430.0	431.0	430.85	430.7	431.25	430.6
23.....	431.0	431.35	430.7	430.85	431.4	430.7	430.3	430.5	431.05	430.9	431.15	430.9
24.....	431.0	431.2	430.55	430.9	430.9	431.05	430.25	430.65	430.55	430.85	431.2	431.1
25.....	430.6	431.15	431.0	430.85	430.6	430.25	430.5	430.45	431.4	430.35	430.9	430.8
26.....	430.65	430.5	430.65	431.0	430.95	431.5	430.75	431.05	430.75	430.5	431.4	431.1
27.....	431.2	431.3	431.2	431.0	431.15	431.2	430.9	430.5	430.85	430.4	431.15	431.2
28.....	431.0	431.3	430.65	430.9	431.2	431.15	430.65	430.2	430.95	430.6	430.85	431.1
29.....	429.95	431.15	431.1	431.1	430.6	430.8	430.6	......	430.85	430.4	430.9	430.9
30.....	430.35	430.75	431.0	431.3	430.8	429.8	429.8	......	430.65	430.75	431.05	430.4
31.....	430.9	431.25	......	431.25	......	430.95	430.65	......	430.7	......	431.4	

SENECA RIVER ABOVE DAM AT SENECA FALLS

This station, established June 17, 1917, is located above the dam at Seneca Falls. This dam was built to maintain a low water-surface at elevation 430.5.

The concrete staff gage at the upper end of lock No. 3 is read twice daily — at 9 A. M. and 4 P. M. — to half-tenths.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER ABOVE DAM AT SENECA FALLS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	428.90	430.65	430.95	430.68	430.90	431.00	430.25	430.00	430.65	430.65	430.45	430.45
2.....	429.60	430.88	430.65	430.92	431.00	430.82	430.90	430.55	430.45	430.40	430.65	431.35
3.....	429.05	431.02	431.05	430.58	430.92	430.90	431.15	431.15	430.45	431.00	430.45	430.75
4.....	428.58	430.80	431.00	430.60	430.40	430.62	430.98	430.80	431.00	430.45	430.32	430.60
5.....	427.82	430.20	430.72	430.58	431.12	430.55	430.95	429.55	430.15	430.65	430.10	430.70
6.....	430.90	430.45	430.82	430.72	430.72	430.58	430.10	429.70	430.85	431.05	430.80	430.70
7.....	431.35	431.05	430.92	431.28	431.08	429.92	430.85	429.60	430.82	431.00	429.95	430.70
8.....	431.40	430.70	430.60	430.75	430.95	430.40	430.00	429.80	430.72	430.75	430.20	431.25
9.....	430.85	430.60	431.00	431.08	430.92	430.30	429.90	431.15	430.05	430.95	430.55	430.80
10.....	430.98	430.75	430.98	430.95	431.40	430.02	430.75	430.92	429.75	431.20	430.30	431.20
11.....	430.45	430.65	430.75	431.02	431.30	429.78	430.20	430.85	430.00	430.82	430.80	430.80
12.....	430.72	430.88	431.22	430.98	431.25	430.50	430.62	429.60	430.85	430.88	430.85	430.95
13.....	430.52	431.02	430.88	431.10	431.15	430.02	430.20	431.22	430.85	430.55	430.50	430.60
14.....	430.75	430.95	431.20	431.00	431.28	431.00	430.65	430.20	430.30	430.50	430.25	430.65
15.....	430.88	430.65	431.08	430.72	431.35	430.75	430.35	430.95	430.32	430.15	430.20	431.25
16.....	430.78	431.28	430.22	430.88	431.18	430.60	430.90	430.92	430.60	429.85	430.60	430.90
17.....	430.65	430.72	431.10	430.60	431.20	431.60	430.55	430.45	430.40	430.40	430.95	430.85
18.....	430.85	431.00	430.85	430.52	430.78	431.68	430.28	429.45	430.35	431.25	430.90	430.75
19.....	430.90	430.65	430.90	430.72	430.70	431.40	430.48	430.00	429.88	430.35	431.05	430.75
20.....	430.50	431.00	431.15	431.22	430.98	431.25	430.92	430.58	430.32	430.70	430.80	430.55
21.....	430.50	430.90	430.70	430.25	430.98	431.28	430.28	430.00	430.70	430.40	431.10	430.70
22.....	431.30	430.62	430.98	430.68	431.05	430.72	430.00	430.50	430.80	430.55	431.10	431.10
23.....	431.10	431.12	430.95	430.80	431.35	430.88	430.35	430.60	431.00	430.85	431.15	431.05
24.....	430.95	431.10	430.50	430.75	430.85	430.95	429.80	430.58	430.48	430.85	431.15	430.75
25.....	430.48	431.15	430.80	430.80	430.58	430.25	430.25	430.20	431.35	430.35	431.10	430.60
26.....	430.58	430.52	430.45	431.00	430.85	431.18	430.65	430.70	430.75	430.25	430.30	431.10
27.....	431.15	431.12	431.10	430.90	430.95	431.08	430.90	430.25	430.75	430.40	430.95	431.15
28.....	430.90	431.20	430.52	431.05	431.10	431.32	430.50	429.85	430.95	430.20	430.70	431.10
29.....	430.15	431.05	430.85	431.08	430.70	430.80	429.45	......	430.60	430.35	430.85	430.60
30.....	430.82	430.70	430.50	431.22	430.70	430.55	430.10	......	430.45	430.70	431.15	430.60
31.....	430.80	431.02	......	431.05	......	431.02	430.15	......	430.52	......	431.10	......

SENECA RIVER AT FREE BRIDGE

This station was established January 1, 1915, and is located at the highway bridge across the Seneca river on the highway leading east from Seneca Falls and about 5 miles distant therefrom, and about 1 mile north, or downstream from Barge canal lock No. 1 of the Cayuga and Seneca canal at the foot of Cayuga lake.

The gage is a direct-reading staff, read twice daily to tenths with occasional half-tenth readings.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER AT FREE BRIDGE, NEAR CAYUGA, for the year ended June 30, 1918. C. D. Martin, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	380.3	376.95	376.7	376.1	377.95	377.3	375.5	376.3	379.65	377.25	377.45	377.25
2.....	380.3	376.9	376.7	376.1	377.8	377.3	375.5	376.2	379.4	376.7	377.15	377.55
3.....	380.2	376.7	376.7	376.1	377.85	377.3	375.5	376.45	379.55	376.7	376.9	377.65
4.....	380.1	376.4	376.7	376.1	378.0	377.3	375.5	376.5	379.55	376.8	376.85	377.0
5.....	379.9	376.3	376.7	376.1	377.95	377.3	375.5	376.5	379.75	376.8	376.7	376.85
6.....	379.75	376.3	376.7	376.1	377.8	377.28	375.4	376.5	380.1	376.8	376.4	375.65
7.....	379.55	376.3	376.7	376.1	377.65	377.2	375.4	376.52	380.25	376.7	376.0	375.9
8.....	379.38	376.3	376.7	376.1	377.75	377.2	375.4	376.62	379.85	376.7	375.85	377.05
9.....	379.2	376.2	376.7	376.1	377.5	377.2	375.4	375.7	379.8	376.7	375.55	377.18
10.....	379.35	376.2	376.7	376.2	377.5	377.3	375.6	376.85	379.7	377.2	375.7	376.8
11.....	379.55	376.2	376.6	376.2	377.5	377.4	375.72	377.15	379.65	377.45	375.8	376.0
12.....	379.7	376.2	376.6	376.1	377.5	377.48	375.85	377.6	379 85	377.7	375.95	375.4
13.....	379.7	376.2	376.6	376.1	377.5	377.4	375.9	377.95	380.95	377.8	376.15	375.5
14.....	379.72	376.2	376.5	376.1	377.4	377.38	375.9	378.6	381.95	377.8	376.7	376.0
15.....	379.7	376.2	376.42	376.1	377.4	377.3	375.9	379.3	382.65	377.7	376.5	376.0
16.....	379.15	376.25	376.4	376.1	377.4	377.3	375.9	379.3	382.7	376.6	376.3	376.15
17.....	378.3	376.45	376.3	376.1	377.4	377.3	375.8	378.9	382.4	377.65	376.15	375.95
18.....	378.05	376.6	376.2	376.1	377.4	377.3	375.8	378.5	382.15	378.6	375.9	375.35
19.....	378.3	376.7	376.2	376.1	377.4	377.3	375.8	378.75	381.95	379.6	375.92	375.1
20.....	378.65	376.78	376.2	376.1	377.4	377.3	375.8	379.75	381.8	379.25	376.0	375.25
21.....	378.35	376.7	376.2	376.1	377.4	377.2	375.8	379.92	381.7	379.1	376.2	375.8
22.....	378.25	376.7	376.2	376.2	377.48	377.1	375.8	379.8	381.55	379.1	376.2	376.1
23.....	378.2	376.72	376.2	376.45	377.5	377.1	375.8	378.6	381.3	378.4	376.2	376.0
24.....	378.1	376.8	376.2	376.65	377.5	377.1	375.8	378.4	380.95	376.35	375.5	375.45
25.....	378.0	376.7	376.2	376.85	377.5	376.95	375.85	378.5	380.75	377.25	375.65	375.3
26.....	377.8	376.7	376.1	377.35	377.4	376.85	376.0	379.95	380.55	377.9	376.2	375.75
27.....	377.5	376.7	376.1	377.4	377.4	376.6	376.15	380.2	380.35	378.6	376.65	375.88
28.....	377.3	376.7	376.1	377.25	377.4	375.95	376.2	380.1	380.15	378.7	377.3	375.8
29.....	377.2	376.7	376.1	377.2	377.4	375.8	376.2	......	380.0	378.75	377.15	375.95
30.....	377.1	376.7	376.1	378.0	377.4	375.6	376.2	......	378.8	378.3	376.95	375.8
31.....	377.0	376.7	......	378.3	......	375.6	376.3	......	377.9	......	377.4	......

SENECA RIVER AT TOLL ROAD BRIDGE, MONTEZUMA

This station, established October 1, 1916, is located at Toll Road bridge over Seneca river, about 2¾ miles south, or upstream from the old N. Y. C. R. R. bridge over Seneca river at Fox Ridge, near Savannah, and supersedes the station at that point. The gage, No. 203, is a standard Type A gage, secured to the downstream side of the boat-house a short distance above the bridge. The gage has a range of 11 feet, between elevations 374.0 and 385.0. The gage bench-mark is a painted rivet head on end dam at northeast corner of Toll Road bridge and is at elevation 376.46 (B. C. datum).

The gage was read twice daily, to tenths, until August 20 and once daily after that date.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER AT TOLL ROAD BRIDGE, MONTEZUMA, for the year ended June 30, 1918. Fred. S. Traver and Harold Higgins, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	*a*	376.1	375.8	375.3	377.3	376.5	375.1	375.7	379.4	376.85	377.3	377.3
2	379.7	376.1	*a*	375.2	377.2	*a*	374.9	375.7	378.9	376.35	376.8	*a*
3	379.65	376.0	375.8	375.1	377.1	376.8	374.7	*a*	*a*	376.3	376.5	377.5
4	*a*	376.0	375.8	375.2	*a*	376.6	374.6	375.9	379.1	376.4	376.5	376.9
5	379.1	*a*	375.8	375.2	377.1	376.4	374.5	376.1	379.2	376.4	*a*	377.2
6	378.95	375.55	375.8	375.3	377.0	376.3	*a*	376.1	379.5	376.4	376.1	375.8
7	378.65	375.5	375.7	*a*	377.0	376.2	374.7	376.1	379.7	*a*	375.9	375.3
8	*a*	375.35	375.7	375.3	376.8	376.2	374.7	376.0	379.4	376.5	375.8	376.8
9	378.45	375.3	*a*	375.2	376.7	*a*	374.7	376.0	379.1	376.4	375.0	*a*
10	378.5	375.15	375.8	375.2	376.7	376.0	374.8	*a*	*a*	376.5	375.5	377.3
11	378.4	375.1	375.7	375.2	*a*	375.9	375.0	*a*	379.0	376.8	375.7	376.5
12	378.7	*a*	375.6	375.1	376.8	375.7	375.2	376.5	379.1	377.3	*a*	375.5
13	378.8	375.25	375.7	375.1	376.7	375.6	*a*	376.7	380.15	377.4	376.0	375.3
14	378.8	375.25	375.6	*a*	376.6	375.6	375.3	377.9	381.2	*a*	376.3	375.7
15	*a*	375.3	375.4	375.2	376.6	375.6	375.3	378.6	382.05	377.5	376.3	376.0
16	378.75	375.3	*a*	375.3	376.6	*a*	375.2	378.7	382.1	376.3	376.2	*a*
17	377.8	375.6	375.6	375.2	376.5	376.5	375.2	*a*	*a*	376.9	375.9	376.2
18	377.4	375.7	375.4	375.1	*a*	376.5	375.2	*a*	381.6	377.9	375.5	375.5
19	377.4	*a*	375.3	375.1	376.7	376.5	375.3	378.2	381.4	378.5	*a*	375.2
20	377.6	375.9	375.2	*a*	376.6	376.5	*a*	379.3	381.3	378.8	375.9	375.7
21	377.5	375.9	375.1	*a*	376.6	376.5	375.3	379.7	381.1	*a*	375.5	375.8
22	*a*	375.9	*a*	375.6	376.6	376.5	375.3	*a*	381.0	378.6	376.0	376.0
23	377.3	375.8	*a*	375.7	376.6	*a*	375.3	378.6	380.8	378.5	376.2	*a*
24	377.2	375.9	375.5	375.7	376.6	376.4	375.2	*a*	*a*	376.9	375.5	375.5
25	377.05	375.9	375.4	375.9	*a*	*a*	375.2	378.0	380.3	377.4	375.6	375.2
26	376.9	*a*	375.3	376.5	376.6	376.5	375.5	379.4	380.3	377.3	*a*	375.7
27	376.8	376.0	375.2	376.7	376.5	376.1	*a*	379.7	379.7	378.1	376.6	375.8
28	376.4	375.9	375.1	*a*	376.4	375.8	375.7	379.8	379.6	*a*	376.4	375.9
29	376.3	375.9	375.0	376.6	376.4	375.4	375.8	......	379.5	378.4	376.7	375.9
30	376.25	375.9	*a*	376.8	376.4	*a*	375.8	......	379.1	378.2	377.1	*a*
31	376.2	375.9	......	377.25	......	375.2	375.7	......	*a*	......	377.0	......

a No record.

SENECA RIVER AT MOSQUITO POINT

This station, established April 21, 1904, is located on the Seneca river at Mosquito Point highway bridge about 3 miles north of Port Byron village and just below the confluence of Owasco outlet and the Seneca river. The standard chain gage, located on the upstream side of the span adjacent to the left bank of Seneca river, was superseded on October 10, 1916, by a standard Type A gage. This gage, No. 202, is secured to the east end of the south abutment of Mosquito Point bridge and has a range of 16 feet, between elevations 371.0 and 387.0. The gage bench-mark is a brass pin in concrete, east end of east wing wall, south abutment of bridge over canal, and is at elevation 387.304 (B. C. datum).

The gage is read once daily — at 9 A. M.— to tenths.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER AT MOSQUITO POINT BRIDGE, PORT BYRON, for the year ended June 30, 1918. William Prettie, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	378.8	375.7	375.5	375.0	376.8	376.0	374.9	375.4	378.7	376.7	376.9	376.8
2.....	378.8	375.6	375.5	374.9	376.7	376.2	374.8	255.4	378.5	376.2	376.5	377.0
3.....	378.7	375.6	375.5	374.8	376.6	376.4	374.6	375.4	378.3	376.0	376.1	377.0
4.....	378.5	375.6	375.5	374.8	376.7	376.3	374.5	375.5	378.6	376.1	376.0	376.4
5.....	378.3	375.5	375.5	374.9	376.8	376.1	374.5	375.7	378.7	376.2	376.2	376.7
6.....	378.2	375.3	375.4	374.9	376.6	376.0	374.4	375.7	378.9	376.1	376.0	375.7
7.....	377.9	375.1	375.4	375.0	376.5	375.8	374.6	375.7	379.1	376.1	375.8	375.3
8.....	377.8	375.0	375.4	375.0	376.4	375.8	374.6	375.7	379.0	376.2	375.6	376.2
9.....	377.8	375.0	375.4	375.0	376.3	376.1	374.6	375.8	378.5	376.2	375.1	376.6
10.....	377.6	374.9	375.5	374.9	376.3	376.3	374.7	375.8	378.5	376.3	375.3	376.8
11.....	377.7	374.9	375.4	374.9	376.3	376.3	374.8	375.9	378.3	376.5	375.5	376.2
12.....	377.7	374.9	375.3	374.9	376.4	376.3	375.0	375.9	378.4	376.8	375.6	375.5
13.....	377.8	375.0	375.3	374.8	376.3	376.2	375.1	376.2	379.0	377.0	375.8	375.1
14.....	377.9	375.0	375.2	374.9	376.2	376.2	373.1	376.7	380.0	377.1	376.1	375.6
15.....	377.9	375.0	375.2	375.0	376.1	376.2	375.1	377.9	380.8	377.2	376.1	375.8
16.....	377.9	375.0	375.2	375.0	376.1	376.2	375.0	378.1	381.1	376.2	375.9	375.9
17.....	377.2	375.2	375.3	374.9	376.0	376.1	375.0	378.1	381.1	376.4	375.8	376.0
18.....	376.8	375.4	375.1	374.9	376.0	376.1	375.0	377.7	380.9	377.2	375.5	375.4
19.....	376.7	375.5	374.9	375.0	376.2	376.1	375.0	377.5	380.7	377.9	375.6	375.0
20.....	376.8	375.6	374.9	375.1	376.2	376.0	375.1	378.3	380.5	378.2	375.7	375.4
21.....	376.7	375.6	375.0	375.3	376.1	376.0	375.1	378.6	380.4	378.2	375.8	375.6
22.....	376.7	375.5	375.0	375.3	376.0	376.1	375.0	378.8	380.4	378.1	375.8	375.8
23.....	376.7	375.5	375.2	375.2	376.2	376.1	375.0	378.2	380.0	378.2	376.0	375.9
24.....	376.5	375.5	375.3	375.3	376.2	376.2	374.9	377.5	379.8	376.9	375.6	375.5
25.....	376.4	375.4	375.1	375.6	376.2	376.3	374.9	377.5	379.6	376.9	375.3	375.2
26.....	376.2	375.5	374.9	376.2	376.2	376.2	374.9	378.4	379.3	376.9	375.8	375.4
27.....	376.2	375.5	374.8	376.3	376.0	375.9	375.3	379.0	379.1	377.3	376.0	375.6
28.....	376.0	375.5	374.8	376.6	376.0	375.4	375.4	379.2	378.9	377.6	376.5	375.7
29.....	375.8	375.5	374.8	376.8	375.9	375.2	375.5	......	378.8	377.7	376.7	375.6
30.....	375.8	375.5	374.9	376.8	375.9	375.1	375.5	......	378.6	377.7	375.8	375.8
31.....	375.7	375.5	......	376.7	......	375.0	375.5	......	377.5	......	376.3	......

SENECA RIVER AT CROSS LAKE

This station, established May 1, 1904, is located at the highway bridge across the Seneca river about 1 mile above the entrance of the Seneca river into Cross lake and about 3 miles northwest of the village of Jordan. The gage, a staff, on a boat-house on the east, or right bank of the river just above the bridge, was superseded on November 13, 1916, by a standard chain gage, No. 201, placed on top of east railing of south span of Jordan highway bridge, above Cross lake, having a range of 12 feet, between elevations 371.0 and 383.0. The gage bench-mark is the northwest corner of concrete well slab in front of hotel on east side of river and is at elevation 393.62 (B. C. datum).

The gage is read twice daily — at 7 A. M. and 2 P. M.— to tenths.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER AT CROSS LAKE, JORDAN, for the year ended June 30, 1918. M. Quimby, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	378.1	375.45	375.2	374.8	376.3	375.7	374.7	375.2	378.05	376.3	376.5	376.45
2	378.0	375.4	375.2	374.7	376.3	375.85	374.55	375.2	377.75	375.9	376.0	376.6
3	377.95	375.4	375.2	374.6	376.3	376.0	374.45	375.25	377.55	375.8	375.65	376.65
4	377.75	375.4	375.2	374.6	376.3	375.9	374.4	375.4	377.6	375.8	375.65	376.25
5	377.55	375.35	375.2	374.7	376.3	375.85	374.3	375.5	377.6	375.8	375.9	376.25
6	377.4	375.2	375.2	374.7	376.25	375.65	374.3	375.45	377.85	375.8	375.7	375.6
7	377.25	375.0	375.2	374.75	376.1	375.5	374.4	375.4	378.2	375.85	375.5	375.25
8	377.1	374.9	375.2	374.9	376.0	375.5	374.4	375.4	378.25	375.9	375.35	375.75
9	377.1	374.8	375.2	374.8	376.0	375.6	374.4	375.4	377.8	375.9	374.9	376.15
10	377.0	374.8	375.2	374.7	375.9	375.6	374.4	375.5	377.8	375.9	375.05	376.35
11	377.0	374.7	375.2	374.7	375.9	375.6	374.55	375.6	377.65	376.0	375.25	375.9
12	377.05	374.7	375.1	374.7	376.0	375.6	374.7	375.6	377.7	376.25	375.5	375.35
13	377.1	374.8	375.0	374.7	375.9	375.6	374.8	375.8	378.15	376.6	375.7	375.05
14	377.2	374.8	374.95	374.75	375.8	375.6	374.9	376.2	378.9	376.7	375.8	375.3
15	377.2	374.8	374.9	374.9	375.8	375.7	374.9	377.95	379.55	376.7	375.8	375.4
16	377.25	374.8	374.9	374.8	375.8	375.7	374.9	377.45	379.85	376.05	375.6	375.6
17	376.8	374.9	375.0	374.7	375.8	375.7	374.8	377.45	379.9	375.9	375.55	375.7
18	376.4	375.0	374.9	374.7	375.8	375.6	374.8	377.2	379.85	376.75	375.35	375.15
19	376.3	375.1	374.8	374.75	375.9	375.6	374.8	377.1	379.55	377.25	375.4	374.85
20	376.3	375.25	374.7	374.9	375.9	375.6	374.9	377.5	379.4	377.5	375.4	375.25
21	376.2	375.2	374.8	375.1	375.8	375.6	374.9	378.0	379.3	377.5	375.5	375.25
22	376.2	375.2	374.85	375.05	375.8	375.6	374.9	378.05	379.15	377.5	375.5	375.6
23	376.2	375.2	375.0	375.0	375.8	375.65	374.9	377.6	379.0	377.4	375.6	375.7
24	376.1	375.2	375.0	375.05	375.8	375.7	374.9	377.1	378.8	376.5	375.3	375.25
25	376.0	375.2	374.9	375.4	375.9	375.85	374.9	377.05	378.6	376.4	375.15	374.95
26	375.9	375.3	374.7	375.8	375.85	375.85	375.0	377.7	378.4	376.4	375.55	375.15
27	375.9	375.25	374.6	376.0	375.7	375.65	375.0	378.2	378.15	376.75	375.85	375.3
28	375.75	375.2	374.6	375.9	375.7	375.25	375.1	378.2	378.0	377.0	376.25	375.5
29	375.6	375.3	374.6	375.9	375.7	374.9	375.2	......	377.9	377.2	376.25	375.4
30	375.6	375.3	374.7	376.05	375.7	374.8	375.2	......	377.7	377.05	375.55	375.5
31	375.5	375.2	......	376.2	......	374.7	375.2	......	376.95	......	376.0	......

SENECA RIVER AT JACK'S REEF

This station, established April 20, 1904, is located on the Seneca river about 2 miles downstream from Cross lake and about 1,700 feet below what is commonly known as State Ditch bridge across the canal cut-off on the road leading from the village of Jack's Reef, near Memphis. The gage, a vertical staff fastened to a tree on the left bank of the stream, was superseded on November 13, 1916, by a standard chain gage, No. 200, placed at the center of the State Ditch bridge on top of north railing, and has a range of 12 feet, between elevations 371.0 and 383.0. The gage bench-mark is top of plug in concrete monument 150 feet west of gage at elevation 394.65 (B. C. datum).

The gage is read once daily — at 9 A. M.— to tenths.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER AT FOOT OF JACK'S REEF, MEMPHIS, for the year ended June 30, 1918. Wm. H. Burns, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	377.7	375.4	375.2	374.9	376.1	375.6	374.6	375.1	377.5	376.2	376.2	376.2
2.....	377.6	375.3	375.2	374.7	376.1	375.7	374.5	375.1	377.4	375.6	375.8	376.4
3.....	377.5	375.3	375.2	374.7	376.1	376.0	374.5	375.1	377.4	375.5	375.4	376.6
4.....	377.4	375.3	375.2	374.7	376.0	375.9	374.5	375.1	377.4	375.6	375.3	376.2
5.....	377.3	375.2	375.2	374.7	376.2	375.9	374.4	375.1	377.5	375.7	375.7	376.1
6.....	377.1	375.1	375.1	374.7	376.1	375.9	374.4	375.1	377.5	375.7	375.6	375.5
7.....	376.9	375.0	375.1	374.7	376.0	375.8	374.5	375.1	377.5	375.8	375.5	375.1
8.....	376.9	374.9	375.1	374.9	375.9	375.8	374.5	375.1	377.5	375.8	375.2	375.5
9.....	376.8	374.8	375.1	374.8	375.8	375.7	374.4	375.2	377.4	375.7	374.9	375.9
10.....	376.7	374.8	375.2	374.7	375.8	375.6	374.4	375.2	377.4	375.7	375.0	376.2
11.....	376.7	374.7	375.2	374.7	375.9	375.4	374.5	375.2	377.4	375.8	375.1	376.2
12.....	376.7	374.7	375.2	374.7	375.9	375.4	374.6	375.4	377.3	376.0	375.3	375.4
13.....	396.8	324.8	375.1	374.6	375.9	375.4	374.7	375.8	377.7	376.3	375.6	375.0
14.....	376.9	374.8	375.1	374.8	375.8	375.5	374.8	376.2	378.3	376.5	375.7	375.3
15.....	376.9	374.8	374.9	374.9	375.7	375.5	374.8	376.7	379.0	376.4	375.8	375.4
16.....	377.0	374.8	374.9	374.7	375.7	375.6	374.8	376.9	379.2	376.0	375.6	375.5
17.....	376.6	374.9	375.0	374.7	375.7	375.7	374.8	376.9	379.3	375.8	375.4	375.6
18.....	376.2	375.1	374.9	374.7	375.8	375.6	374.8	376.7	379.2	376.4	375.2	375.3
19.....	376.0	375.2	374.7	374.6	375.8	375.5	374.8	376.5	378.9	376.9	375.4	375.0
20.....	376.1	375.3	374.7	374.8	375.8	375.5	374.8	376.9	378.8	376.9	375.5	375.1
21.....	376.1	375.2	374.8	375.0	375.7	375.5	374.8	377.3	378.6	376.9	375.5	375.2
22.....	376.1	375.2	374.9	375.1	375.7	375.5	374.8	377.5	378.5	377.1	375.5	375.4
23.....	376.0	375.2	374.9	374.9	375.8	375.6	374.8	377.5	378.4	377.2	375.4	375.4
24.....	375.9	375.2	375.1	374.9	375.8	375.7	374.7	377.1	378.3	376.5	375.3	375.3
25.....	375.8	375.2	374.9	375.4	375.9	375.5	374.7	376.9	378.2	376.2	375.1	374.9
26.....	375.7	375.2	374.8	375.6	375.8	375.4	374.7	377.3	378.0	376.1	375.2	375.2
27.....	375.7	375.3	374.7	375.8	375.8	375.2	374.7	377.7	377.8	376.5	375.7	375.3
28.....	375.6	375.2	374.6	375.8	375.7	375.1	374.7	377.6	377.6	376.7	376.0	375.4
29.....	375.6	375.2	374.6	375.8	375.7	375.0	374.8	......	377.5	376.7	376.1	375.4
30.....	375.5	375.2	374.7	375.9	375.6	374.9	374.9	......	377.4	376.6	375.8	375.3
31.....	375.4	375.2	......	376.1	......	374.8	375.0	......	376.8	......	375.9	....

SENECA RIVER ABOVE DAM, BALDWINSVILLE

This station, located above the dam in the Seneca river at Baldwinsville 12.5 miles above the confluence of the Seneca and Oneida rivers at Three River Point, was established November 12, 1898, by the United States Deep Waterways Survey, and is now maintained by this Department.

At Baldwinsville the old dam, crest elevation 372.28, has been raised in connection with the construction of the Barge canal by the addition of an ogee concrete crest having a total length of 352 feet at elevation 374.0, and an automatic sluice-gate having a clear opening 50 feet wide designed to open as the water-surface above the dam rises, has replaced the necessary amount of old crest at the north end of the dam.

The gage, a staff located on the upper approach wall to lock No. 24, was replaced on August 26, 1916, by a standard Type B gage, No. 199, secured to the west end of the north retaining wall above lock No. 24, and having a range of 12 feet, between elevations 369.0 and 381.0. A standard bench-mark plug was set in the face of the wall near the gage at elevation 378.0 (B. C. datum).

The gage is read twice daily — at 8 A. M. and 4 P. M. — to half-tenths.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER ABOVE DAM AT BALDWINSVILLE, for the year ended June 30, 1918. H. C. Fay, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	376.65	375.02	374.90	374.55	375.60	375.20	374.42	374.78	376.52	375.20	375.40	375.72
2	376.58	374.95	374.98	374.45	375.55	375.45	374.25	374.70	376.38	375.08	375.12	375.90
3	376.50	374.95	374.92	374.40	375.60	375.42	374.15	374.82	376.38	375.25	374.85	375.78
4	376.45	375.08	374.85	374.40	375.72	375.35	374.05	375.02	376.35	375.82	374.85	375.60
5	376.28	375.05	374.80	374.42	375.62	375.25	374.00	374.90	376.40	375.62	375.45	375.52
6	376.18	374.82	374.80	374.45	375.48	375.10	374.15	374.80	376.52	375.40	375.30	375.18
7	376 10	374.65	374.72	374.62	375.45	375.00	374.18	374.78	376.70	375.50	375.00	374.92
8	376.00	374.62	374.75	374.58	375.40	375.10	374.25	374.72	376.50	375.40	374.98	375.32
9	375.90	374.62	374.95	374.48	375.38	375.25	374.22	374.92	376.08	375.32	374.62	375.65
10	375.85	374.58	374.88	374.45	375.42	374.98	374.22	375.08	376.18	375.38	374.92	375.68
11	375.85	374.42	374.80	374.40	375.50	374.95	374.38	375.10	375.85	375.45	375.00	375.28
12	375.88	374.58	374.75	374.40	375.40	374.98	374.48	375.05	375.92	375.70	375.18	374.95
13	375.92	374.58	374.70	374.42	375.32	375.00	374.68	375.18	376.22	375.80	375.22	374.80
14	376.00	374.52	374.65	374.52	375.30	375.05	374.62	375.35	376.68	376.00	375.32	374.95
15	376.10	374.50	374.62	374.62	375.30	375.60	374.50	375.92	377.12	375.95	375.35	375.10
16	376.05	374.52	374.72	374.58	375.30	375.22	374.50	376.18	377.25	375.45	375.20	375.28
17	375.72	374.70	374.72	374.45	375.30	375.05	374.42	376.20	377.42	375.42	375.10	375.25
18	375.52	374.78	374.60	374.45	375.42	375.00	374.52	375.95	377.18	375.82	374.95	374.88
19	375.40	375.00	374.55	374.38	375.32	375.00	374.60	375.82	377.10	376.15	375.08	374.58
20	375.45	374.95	374.50	374.52	375.32	375.00	374.68	376.20	376.95	376.38	375.15	374.80
21	375.42	374.85	374.55	374.82	375.25	375.00	374.65	376.30	376.90	376.40	375.15	374.85
22	375.48	374.80	374.60	374.78	375.25	375.08	374.60	376.32	376.85	376.35	375.12	375.00
23	375.42	374.85	374.90	374.65	375.28	375.20	374.45	376.12	376.78	376.35	375.28	375.25
24	375.28	374.90	374.75	374.65	375.28	375.18	374.38	375.92	376.80	375.68	375.20	374.90
25	375.20	374.92	374.60	375.05	375.40	375.40	374.30	375.80	376.58	375.48	374.92	374.60
26	375.20	375.08	374.48	375.28	375.32	375.32	374.52	376.40	376.52	375.38	375.20	374.78
27	375.32	374.95	374.40	375.38	375.22	375.02	374.78	376.58	376.42	375.65	375.32	374.92
28	375.22	374.82	374.38	375.45	375.20	374.78	374.80	376.60	376.28	375.92	375.52	375.00
29	375.28	374.82	374.38	375.40	375.20	374.60	374.78	......	376.25	375.95	375.52	375.00
30	375.15	374.85	374.60	375.42	375.18	374.60	374.72	......	376.18	375.78	375.18	375.15
31	375.08	374.85	......	375.55	......	374.48	374.75	......	375.78	......	375.38	......

SENECA RIVER BELOW DAM, BALDWINSVILLE

This station, located below the dam in the Seneca river at Baldwinsville, was established November 12, 1898, by the United States Deep Waterways Survey and is now maintained by this Department. The gage, a staff located on the lower approach wall to lock No. 24, was replaced on July 25, 1916, by a standard Type A gage, No. 198, in two sections. The lower section is secured to the lower north approach wall, under the Syracuse street bridge, and has a range of 8 feet, between elevations 361.0 and 369.0. The upper section is secured to the north abutment of the Syracuse street bridge and has a range of 4 feet, between elevations 369.0 and 373.0. The gage bench-mark is a square chiseled mark on the northwest concrete stair railing, lock No. 24, and is at elevation 371.94 (B. C. datum).

The gage is read twice daily — at 8 A. M. and 4 P. M.— to half-tenths.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER BELOW DAM AT BALDWINSVILLE, for the year ended June 30, 1918. H. C. Fay, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	366.18	364.15	364.22	364.12	364.98	364.30	363.78	364.00	366.58	365.75	365.40	364.58
2	366.22	364.12	364.20	363.88	364.98	364.52	363.70	363.98	366.28	365.20	365.05	364.72
3	366.02	364.08	364.22	363.75	364.80	364.62	363.62	363.90	366.05	364.92	364.82	364.78
4	365.85	364.05	364.22	363.70	364.78	364.45	363.55	364.18	366.15	364.92	364.78	364.60
5	365.70	364.10	364.20	363.80	364.80	364.52	363.50	364.45	366.15	364.90	364.45	364.48
6	365.60	364.20	364.15	363.78	364.72	364.50	363.45	364.42	366.35	364.82	364.42	364.22
7	365.48	364.10	364.12	363.78	364.62	364.32	363.72	364.38	366.75	364.80	364.40	364.12
8	365.25	364.10	364.12	364.02	364.52	364.20	363.58	364.30	366.90	364.88	364.35	364.22
9	365.20	363.88	364.00	364.00	364.50	364.30	363.48	364.20	366.85	364.98	364.15	364.52
10	365.30	363.78	364.05	363.98	364.42	364.38	363.45	364.25	366.58	365.00	364.10	364.75
11	365.40	363.78	364.18	363.98	364.40	364.28	363.42	364.48	366.82	365.00	364.08	364.50
12	365.42	363.72	364.15	364.00	364.55	364.38	363.50	364.55	366.68	365.12	364.18	364.22
13	365.40	363.90	364.12	363.95	364.52	364.42	363.70	364.62	366.90	365.32	364.52	364.10
14	365.42	363.85	364.10	363.95	364.42	364.52	363.95	364.68	367.48	365.42	364.52	364.22
15	365.42	363.80	364.02	364.15	364.32	364.50	363.98	365.15	368.12	365.40	364.50	364.20
16	365.45	363.80	364.00	364.08	364.42	364.45	363.98	365.75	368.45	364.95	364.48	364.08
17	365.25	363.88	364.18	363.98	364.40	364.65	363.90	365.95	368.50	364.78	364.32	364.10
18	365.42	363.92	364.10	364.00	364.40	364.60	363.92	365.85	368.52	364.95	364.22	363.90
19	364.78	364.05	364.15	364.00	364.50	364.55	364.10	365.58	368.42	365.58	364.12	363.68
20	364.80	364.38	364.10	364.10	364.42	364.55	364.20	366.25	368.32	365.88	364.15	363.95
21	364.80	364.18	364.00	364.24	364.35	364.55	364.25	366.70	368.25	365.92	364.30	364.30
22	364.72	364.18	364.00	364.28	364.45	364.50	364.30	366.72	368.12	366.02	364.38	364.35
23	364.68	364.22	363.82	364.25	364.42	364.52	364.32	366.35	368.02	365.92	364.48	364.18
24	364.60	364.18	363.95	364.22	364.42	364.75	364.18	365.80	367.80	365.50	364.42	364.12
25	364.60	364.15	363.92	364.42	364.32	364.70	364.05	365.50	367.70	365.18	364.18	364.22
26	364.55	364.15	364.02	364.62	364.52	364.85	363.95	365.45	367.50	365.10	364.38	363.90
27	364.35	364.48	364.15	364.68	364.50	364.65	363.95	366.78	367.25	365.18	364.45	363.98
28	364.32	364.35	364.05	364.60	364.50	364.28	364.18	366.75	367.00	365.32	364.52	363.98
29	364.20	364.32	364.02	364.70	364.22	364.00	364.30	......	366.80	365.60	364.65	364.08
30	364.30	364.30	363.95	364.70	364.30	363.92	364.12	......	366.65	365.62	364.30	364.15
31	364.20	364.28	......	364.82	......	363.92	364.08	......	366.22	......	364.25	...

SENECA RIVER AT MUD LOCK, NEAR LONG BRANCH

This station was located at Mud lock, No. 5, on the old Oswego canal at its junction with the Seneca river, about ¼ mile below the mouth of Onondaga outlet. The gage, a staff located on the timber approach below old Mud lock, was replaced on July 7, 1916, by a standard Type A gage, No. 197, in the same location, having a range of 12 feet, between elevations 360.0 and 372.0. A standard bench-mark plug was set in the wall near the gage at elevation 369.0 (B. C. datum). This station was abandoned on October 31, 1917. A new station was established at the Long Branch boat-house on Onondaga outlet on December 19, 1917 (see page 120). This new station will supersede the one at Mud lock and the one formerly published as "Onondaga Outlet at Long Branch."

The gage was read once daily to tenths.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER AT MUD LOCK, NEAR LONG BRANCH, LIVERPOOL P. O., for the year ended June 30, 1918. Frank Shane, Observer

DAY	July	Aug.	Sept.	Oct.	DAY	July	Aug.	Sept.	Oct.
1	365.6	364.4	364.3	363.9	16	364.9	364.5	364.1	364.0
2	365.7	364.3	364.3	363.7	17	364.9	364.4	364.1	363.8
3	365.5	364.3	364.3	363.6	18	364.8	364.5	364.0	363.8
4	365.4	364.3	364.2	363.5	19	364.6	364.4	364.1	363.9
5	365.3	364.3	364.1	363.5	20	364.6	364.3	364.0	364.1
6	365.2	364.3	364.1	363.6	21	364.5	364.3	364.0	364.1
7	365.1	364.4	364.0	363.6	22	364.5	364.3	363.9	364.2
8	364.8	364.5	364.0	363.6	23	364.5	364.3	363.9	364.3
9	364.8	364.5	364.0	363.6	24	364.5	364.3	363.7	364.4
10	364.9	364.5	364.0	363.7	25	364.5	364.3	363.8	364.4
11	364.9	364.5	364.0	363.7	26	364.4	364.3	363.9	364.5
12	364.9	364.5	364.0	363.7	27	364.3	364.4	364.0	364.5
13	365.0	364.5	364.1	363.9	28	364.3	364.4	364.0	364.6
14	365.0	364.6	364.1	364.0	29	364.2	364.4	364.0	364.5
15	365.0	364.6	364.0	364.1	30	364.3	364.4	364.0	364.6
					31	364.3	364.4	....	364.6

NOTE.— This station abandoned October 31, 1917.

SENECA RIVER AT BELGIUM

This station is located at the highway bridge across the Seneca river at Belgium. It was established April 14, 1904. The staff gage, located on the docking on the right bank of the stream, a short distance above the highway bridge, was superseded in March, 1916, by a chain gage on the new bridge.

On October 17, 1917, a standard Type A gage, No. 196, was erected on the upstream face of the north abutment, having a range of 8 feet, between elevations 363.0 and 371.0. State bench-mark No. 56 is a copper plug in the door-sill of a brick building 50 feet north of the east abutment of the bridge, and is at elevation 370.368 (B. C. datum).

The gage is read once daily to hundredths.

Daily elevation of water-surface (B. C. datum) of SENECA RIVER AT HIGHWAY BRIDGE AT BELGIUM, for the year ended June 30, 1918. A. R. Gates, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	364.86	363.77	364.14	364.12	364.55	364.12	363.69	363.83	365.32	365.20	364.79	364.15
2.....	364.89	363.73	364.00	363.80	364.55	364.28	363.60	363.79	365.19	364.85	364.60	364.39
3.....	364.74	363.64	364.15	363.65	364.42	364.33	363.50	363.88	365.13	364.70	364.41	364.44
4.....	364.72	363.64	364.14	363.68	364.37	364.11	363.45	364.90	365.80	364.66	364.40	364.29
5.....	364.50	363.87	364.10	363.68	364.37	364.21	363.40	364.21	365.00	364.64	364.25	364.11
6.....	364.45	363.96	363.95	363.68	364.85	364.25	363.38	364.18	365.20	364.59	364.25	364.10
7.....	364.44	363.70	363.94	363.75	364.23	364.10	363.66	364.14	365.28	364.56	364.11	364.00
8.....	364.39	363.69	363.94	363.98	364.18	363.98	363.50	364.80	365.30	364.59	364.19	364.00
9.....	364.30	363.54	363.94	363.95	364.20	363.99	363.37	364.00	365.34	364.70	364.50	364.30
10.....	364.32	363.44	363.94	363.92	364.15	364.02	363.35	364.60	365.35	364.75	364.00	364.41
11.....	364.44	363.12	364.04	363.83	364.12	363.84	363.32	364.26	365.69	364.72	363.94	364.31
12.....	364.43	363.14	364.02	363.89	364.25	364.11	363.42	364.30	365.80	364.75	364.60	364.19
13.....	364.35	363.56	364.00	363.95	364.14	364.12	363.63	364.25	365.55	364.94	364.32	364.00
14.....	364.40	363.84	363.95	363.90	364.14	364.21	363.82	364.16	365.95	365.10	364.31	364.00
15.....	364.36	363.73	363.99	364.11	364.05	364.21	363.81	364.30	366.40	364.94	364.26	364.00
16.....	364.38	363.78	363.94	364.06	364.13	364.21	363.80	364.80	366.72	364.60	364.25	363.98
17.....	364.30	363.83	364.12	363.95	364.16	364.33	363.89	365.90	366.75	364.44	364.14	364.00
18.....	364.13	363.84	364.02	363.91	364.20	364.28	363.81	365.90	366.81	364.55	364.10	363.80
19.....	364.06	363.94	364.12	363.85	364.25	364.26	364.40	364.86	366.80	364.90	364.50	363.65
20.....	364.09	364.18	364.10	364.00	364.15	364.24	364.11	365.50	366.75	365.18	364.00	363.75
21.....	364.05	364.02	364.00	364.10	364.02	364.25	364.17	365.71	366.71	365.23	364.16	364.10
22.....	364.04	364.06	363.96	364.15	364.18	364.16	364.18	365.71	366.69	365.30	364.20	364.15
23.....	363.90	364.04	363.78	364.12	364.22	364.28	364.16	365.40	366.65	365.11	364.24	364.20
24.....	363.93	364.06	363.90	364.12	364.12	364.41	364.10	365.11	366.55	364.86	364.24	363.95
25.....	363.98	364.04	363.90	364.22	364.10	364.41	363.88	364.60	366.48	364.60	364.60	363.84
26.....	363.94	364.04	363.95	364.38	364.24	364.45	363.78	365.20	366.31	364.60	364.27	363.80
27.....	363.79	364.35	363.97	364.35	364.22	364.27	363.85	365.55	366.14	364.57	364.25	363.80
28.....	363.91	364.21	363.95	364.38	364.16	363.12	364.10	365.48	365.95	364.75	364.21	363.79
29.....	363.89	364.25	363.95	364.40	364.03	363.75	363.99	......	365.79	364.89	364.27	363.79
30.....	363.84	364.19	363.95	364.27	364.03	363.86	363.98	......	365.60	364.81	364.10	363.95
31.....	363.79	364.16	......	364.40	......	363.82	363.86	......	365.49	......	364.00	......

KEUKA LAKE

DESCRIPTION

Keuka, or "Crooked," lake is one of the finger group of lakes in central New York. It lies west of the southerly part of Seneca lake, into which it drains. The lake is long and narrow, lying generally in a north and south direction, the northerly portion being divided into two approximately parallel branches. The shores of the lake rise rather abruptly from the water's edge. It has a total drainage area of 178.47 square miles, of which 17.51 square miles, or 9.8 per cent, is water-surface.

The lake is retained by a State dam in the outlet at Penn Yan. The outflow of the lake is practically controlled by the flow through two mills located at each end of the State dam, the water only occasionally flowing over the crest. This lake has a natural range of about 6 feet and according to occasional records of a gage maintained on the outlet about a fourth of a mile above the State dam by Mr. W. N. Wise of Penn Yan, the surface rose to 4 feet above the crest of the dam in April, 1870, and fell to 6 feet below the crest in December, 1899, giving an extreme range of 10 feet. The surface of the lake is at elevation about 715, Barge canal datum.

KEUKA LAKE AT PENN YAN

This station is located at Penn Yan at the foot of Keuka lake. It was established January 1, 1915, to determine lake level. The gage is located on the outlet about ¾ mile from the lake and above the State dam. It is a staff attached to a pile near the right bank about 100 feet above the upper bridge. The gage is read once daily — at 8 A. M. Gage heights only are published, as Barge canal levels have not as yet been extended to this locality. For earlier records in this vicinity see Keuka lake description, given above.

Daily gage height, in feet, of KEUKA LAKE AT PENN YAN, for the year ended June 30, 1918. E. F. Garbus, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	6.8	6.6	6.3	5.6	6.4	5.7	5.0	4.4	5.0	6.6	7.0	7.9
2	6.8	6.5	6.3	5.6	6.4	5.7	5.0	4.4	5.1	6.6	7.0	6.9
3	6.8	6.5	6.3	5.6	6.3	5.6	5.0	4.3	5.1	6.6	7.0	6.8
4	6.8	6.5	6.2	5.6	6.3	5.6	5.0	4.3	5.2	6.6	7.0	6.8
5	6.7	6.5	6.2	5.6	6.3	5.6	5.0	4.3	5.2	6.6	6.9	6.8
6	6.7	6.4	6.2	5.5	6.3	5.6	5.0	4.3	5.4	6.6	6.9	6.8
7	6.7	6.4	6.1	5.5	6.2	5.5	5.0	4.2	5.4	6.5	6.9	6.7
8	6.7	6.4	6.1	5.5	6.2	5.5	4.9	4.2	5.4	6.5	6.9	6.7
9	6.7	6.4	6.1	5.5	6.2	5.5	4.9	4.2	5.5	6.5	6.8	6.7
10	6.7	6.3	6.0	5.4	6.2	5.5	4.9	4.2	5.5	6.5	6.8	6.7
11	6.8	6.3	6.0	5.4	6.1	5.5	4.9	4.1	5.6	6.5	6.8	6.6
12	6.8	6.3	6.0	5.4	6.1	5.4	4.9	4.1	5.6	6.6	6.8	6.6
13	6.8	6.3	5.9	5.4	6.1	5.4	4.8	4.1	5.8	6.6	6.8	6.7
14	6.9	6.4	5.9	5.4	6.1	5.4	4.8	4.3	6.4	6.7	6.9	6.7
15	6.9	6.4	5.9	5.3	6.0	5.4	4.8	4.3	6.6	6.7	6.9	6.7
16	6.9	6.4	5.8	5.3	6.0	5.3	4.8	4.5	6.6	6.8	6.9	6.6
17	6.8	6.4	5.8	5.3	6.0	5.3	4.8	4.5	6.7	6.8	6.8	6.6
18	6.8	6.4	5.8	5.3	6.0	5.3	4.7	4.5	6.7	7.0	6.8	6.6
19	6.9	6.5	5.8	5.4	6.0	5.3	4.7	4.6	6.7	7.0	6.8	6.5
20	6.9	6.5	5.9	5.4	6.0	5.2	4.7	4.6	6.7	7.1	6.8	6.5
21	6.8	6.4	5.9	5.4	5.9	5.2	4.7	4.7	6.7	7.1	6.9	6.5
22	6.8	6.4	5.9	5.4	5.9	5.2	4.6	4.8	6.8	7.1	6.9	6.5
23	6.8	6.4	5.9	5.4	5.9	5.2	4.6	4.8	6.8	7.1	6.9	6.4
24	6.7	6.4	5.8	5.5	5.9	5.2	4.6	4.8	6.8	7.1	6.8	6.4
25	6.7	6.4	5.8	5.8	5.8	5.2	4.6	4.8	6.8	7.1	6.8	6.4
26	6.7	6.3	5.8	5.8	5.8	5.1	4.5	4.9	6.7	7.1	6.8	6.4
27	6.7	6.3	5.7	5.8	5.8	5.1	4.5	4.9	6.7	7.1	7.0	6.3
28	6.6	6.3	5.7	6.2	5.8	5.1	4.5	5.0	6.7	7.0	7.0	6.3
29	6.6	6.2	5.7	6.2	5.7	5.1	4.5	......	6.7	7.0	7.0	6.3
30	6.6	6.2	5.6	6.4	5.7	5.1	4.4	......	6.7	7.0	7.0	6.3
31	6.6	6.2	......	6.4	......	5.1	4.4	......	6.6	......	7.9	......

SENECA LAKE

DESCRIPTION

Seneca lake, the largest and deepest of the finger group lakes of central New York, has a length of about 34.4 miles and a width varying from 1 to 3 miles. The area draining directly into Seneca lake, exclusive of Keuka lake above its outlet, is 529.62 square miles, of which 67.16 square miles, or 12.7 per cent, is water-surface. The total drainage above the outlet at Seneca lake, including Keuka lake, is 708.09 square miles, of which 84.67 square miles, or 12 per cent, is water-surface.

This lake has the usual alluvial fan at its south end which is characteristic of these glacial lakes.

Records of water-surface fluctuations are available, as follows:

Two records in 1841 and at varying intervals from June, 1844, to December, 1846, referred to the bottom of the Geneva level, are found in the testimony of O. W. Childs, Esq., Chief Engineer, in publication entitled "Canal Frauds," Assembly document No. 100 (New York State), February 17, 1847, pp. 264–5.

1891 and 1910, inclusive, records at varying intervals of a gage maintained by Mr. Chas. W. Ingalls at Watkins.

1900–1905, inclusive, observations at irregular intervals will be found in the records of the City Engineer's office, Geneva.

March, 1901, to October, 1904, inclusive, observations made by the State Engineering Department during the construction of the regulating works in the outlet about 1,500 feet from the lake.

1907 to 1909, inclusive, weekly records taken at the Geneva pumping station on Wednesday nights.

August, 1909, to December, 1914, inclusive, records of the gage maintained by the State Engineer's Department above the guard-gate in outlet about 1,500 feet from the lake.

September 21, 1912, to June 30, 1918, at Watkins.

January 1, 1915, to June 30, 1918, at Geneva.

The discharge from and the surface of this lake is controlled by regulating works at Waterloo, about 5 miles from the lake, constructed in connection with the canalization of the Seneca river for the Barge canal. These works consist of six Taintor gates, each having a clear span of 36 feet.

For this lake certain water-surface elevations were assumed for use in the design of the Barge canal. These elevations, referred to Barge canal datum, are as follows: Average high water, elevation 447.0; canal pool, or low navigable stage, elevation 445.0; average low water, elevation 444.5. By average surface is meant the surface unaffected by wind.

SENECA LAKE AT WATKINS

This station, established September 21, 1912, is located at the head, or south end of Seneca lake. The gage was originally located at the Fourth street bridge over the canal. On January 1, 1915, a direct-reading staff was located on McAnarney's dock. On July 12, 1916, a standard Type A gage, No. 209, was erected on docking at end of boat slip back of Lembeck and Betz' malt house. It has a range of 8 feet, between elevations 442.0 and 450.0. The gage bench-mark is the top of concrete foundation, northeast corner of Lembeck and Betz' boiler room and is at elevation 453.465 (B. C. datum).

The gage is read once daily — at noon — to half-tenths and even hundredths.

Daily elevation of water-surface (B. C. datum) of SENECA LAKE AT WATKINS, for the year ended June 30, 1918. Fred Wright, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	446.70	447.25	447.30	446.86	447.30	446.88	445.98	445.30	445.50	446.52	447.08	447.12
2.....	446.86	447.25	447.30	446.84	447.30	446.86	445.98	445.26	445.50	446.50	447.06	447.10
3.....	446.86	447.25	447.30	446.82	447.25	446.84	445.98	445.22	445.60	446.48	447.04	447.10
4.....	446.90	447.25	447.30	446.82	447.25	446.80	445.98	445.18	445.60	446.48	447.02	447.10
5.....	446.90	447.20	447.28	446.82	447.25	446.80	445.98	445.14	445.60	446.48	447.02	447.10
6.....	446.90	447.20	447.26	446.80	447.25	446.78	445.96	445.10	445.60	446.48	447.00	447.08
7.....	446.90	447.15	447.24	446.78	447.20	446.76	445.94	445.06	445.68	446.48	447.00	447.08
8.....	446.90	447.15	447.22	446.76	447.20	446.74	445.92	445.02	445.68	446.48	447.00	447.06
9.....	446.90	447.15	447.20	446.74	447.10	446.72	445.90	444.98	445.70	446.48	447.00	447.02
10.....	446.90	447.15	447.20	446.72	447.10	446.70	445.88	444.94	445.80	446.50	447 00	447.00
11.....	446.98	447.15	447.18	446.70	447.10	446.68	445.86	444.92	445.80	446.52	447.00	447.00
12.....	447.00	447.15	447.18	446.68	447.10	446.66	445.84	444.90	445.90	446.54	447.00	447.00
13.....	447.08	447.15	447.16	444.66	447.10	446.64	445.82	444.88	446.00	446.60	447.00	447.00
14.....	447.10	447.20	447.16	446.64	447.10	446.62	445.80	445.00	446.30	446.68	446.98	447.00
15.....	447.20	447.20	447.14	446.60	447.05	446.60	445.78	445.20	446.50	446.72	446.96	447.00
16.....	447.20	447.40	447.14	446.58	447.05	446.56	445.76	445.20	446.70	446.76	446.94	447.00
17.....	447.20	447.40	447.12	446.56	447.00	446.52	445.74	445.20	446.70	446.80	446.92	446.98
18.....	447.20	447.40	447.10	446.52	447.00	446.48	445.72	445.20	446.70	446.84	446.90	446.96
19.....	447.20	447.35	447.08	446.50	447.00	446.44	445.70	445.20	446.70	446.90	446.90	446.94
20.....	447.20	447.35	447.06	446.60	447.00	446.40	445.68	445.20	446.70	447.00	447.00	446.92
21.....	447.20	447.32	447.04	446.60	447.00	446.36	445.66	445.30	446.70	447.10	447.00	446.90
22.....	447.20	447.32	447.02	446.60	447.00	446.32	445.62	445.30	446.70	447.14	447.00	446.88
23.....	447.20	447.32	447.00	446.60	446.98	446.28	445.60	445.30	446.70	447.14	447.04	446.88
24.....	447.20	447.30	446.98	446.60	446.98	446.24	445.58	445.30	446.68	447.14	447.08	446.88
25.....	447.20	447.30	446.96	446.90	446.96	446.20	445.56	445.30	446.66	447.14	447.10	446.88
26.....	447.20	447.30	446.94	447.00	446.96	446.16	445.54	445.40	446.64	447.12	447.20	446.86
27.....	447.20	447.30	446.92	447.00	446.94	446.12	445.50	445.40	446.62	447.12	447.20	446.84
28.....	447.20	447.30	446.90	447.10	446.94	446.08	445.46	445.40	446.60	447.10	447.18	446.82
29.....	447.25	447.30	446.88	447.20	446.92	446.04	445.42	......	446.58	447.10	447.18	446.80
30.....	447.25	447.30	446.86	447.20	446.90	446.02	445.38	......	446.56	447.10	447.16	446.78
31.....	447.25	447.30	......	447.30	......	446.00	445.34	......	446.54	......	447.14	......

SENECA LAKE AT GENEVA

This station was established January 1, 1915, and was originally located near Castle street in the old Cayuga and Seneca canal harbor, but on March 19, 1915, it was moved to the Cayuga and Seneca canal just north of Lake street. The staff gage formerly used was replaced on July 14, 1916, by a standard Type A gage. This gage, No. 208, is secured to the east harbor wall just above the Lake street bridge, and has a range of 8 feet, between elevations 442.0 and 450.0. A standard bench-mark plug is set in the face of the wall near the gage, at elevation 449.0 (B. C. datum).

This station replaces the station formerly maintained in the Seneca river above the guard-gate about 1,500 feet below the mouth of Seneca lake.

The gage is read once daily — at noon — to half-tenths and even hundredths.

Daily elevation of water-surface (B. C. datum) of SENECA LAKE AT GENEVA, for the year ended June 30, 1918. T. C. McNicholas, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	446.65	447.22	447.24	446.74	447.25	446.78	446.00	445.18	445.34	446.48	447.00	447.10
2	446.84	447.22	447.16	446.75	447.20	446.78	445.96	445.10	445.54	446.50	446.96	447.05
3	446.84	447.15	447.22	446.65	447.14	446.76	445.92	445.10	445.52	446.48	446.96	447.00
4	446.80	447.16	447.20	446.74	447.18	446.76	445.90	444.98	445.50	446.42	446.98	446.95
5	446.84	447.18	447.15	446.72	447.18	446.76	445.90	444.96	445.50	446.44	446.96	446.90
6	446.82	447.10	447.12	446.64	447.18	446.74	445.90	444.92	445.62	446.44	446.95	446.90
7	446.80	447.05	447.10	446.60	447.16	446.65	445.94	444.86	445.62	446.48	446.92	447.00
8	446.85	447.15	447.28	446.66	447.16	446.60	445.85	444.80	445.64	446.40	446.90	446.95
9	446.80	447.12	447.18	446.60	447.15	446.60	445.80	444.72	445.72	446.36	446.88	446.92
10	446.90	447.02	447.14	446.60	447.15	446.58	445.78	444.76	445.82	446.35	446.88	446.92
11	446.85	447.08	447.12	446.58	447.12	446.56	445.76	444.88	445.94	446.55	446.85	446.90
12	446.90	447.05	447.10	446.70	446.98	446.54	445.80	444.72	445.90	446.60	446.85	446.80
13	447.02	447.01	447.08	446.60	447.10	446.52	445.68	444.75	445.92	446.60	447.00	445.94
14	446.96	447.26	447.06	446.52	447.10	446.48	445.62	445.00	446.38	446.65	446.92	446.90
15	447.05	447.25	447.01	446.50	447.04	446.38	445.64	445.05	446.52	446.75	446.86	446.88
16	447.10	447.26	447.04	446.46	447.02	446.42	445.60	445.18	446.50	446.78	446.88	446.86
17	447.12	447.26	447.02	446.44	446.96	446.42	445.55	445.18	446.54	446.78	446.84	446.85
18	447.15	447.30	447.02	446.50	447.00	446.48	445.54	445.15	446.56	446.90	446.80	446.82
19	447.12	447.34	447.00	446.42	446.95	446.46	445.54	445.10	446.51	447.05	446.78	446.76
20	447.14	447.30	446.96	446.56	446.95	446.30	445.52	445.22	446.62	447.15	446.80	446.74
21	447.20	447.25	446.95	446.58	446.94	446.25	445.50	445.22	446.60	447.18	446.86	446.85
22	447.20	447.26	447.00	446.50	446.92	446.20	445.50	445.25	446.60	447.10	446.86	446.80
23	447.18	447.26	447.00	446.50	446.90	446.20	445.52	445.30	446.60	447.06	446.88	446.80
24	447.15	447.32	447.07	446.60	446.88	446.24	445.48	445.20	446.62	447.10	446.90	446.82
25	447.18	447.22	446.95	446.85	446.86	446.10	445.44	445.15	446.62	447.08	446.94	446.72
26	447.16	447.20	446.88	446.95	446.84	446.04	445.36	445.35	446.58	447.00	447.02	446.72
27	447.15	447.24	446.92	447.08	446.85	446.08	445.30	445.35	446.58	447.05	447.02	446.70
28	447.15	447.22	446.88	447.05	446.80	445.95	445.45	445.32	446.58	447.10	447.12	446.70
29	447.25	447.18	446.86	447.25	446.82	446.00	445.44	......	446.55	447.00	447.10	446.68
30	447.25	447.12	446.84	447.28	446.90	445.95	445.20	......	446.52	447.00	447.08	446.75
31	447.18	447.06	......	447.20	......	446.00	445.15	......	446.50	......	447.10	......

CAYUGA LAKE

DESCRIPTION

Cayuga lake, the second in size of the finger lakes in central New York, has a length of about 37½ miles and a width varying from 1 to 3 miles, and lies generally in a north and south direction. It has the usual abruptly rising shores and the alluvial fan at its head, or south end. The territory draining directly into this lake, exclusive of Seneca lake, has an area of 863.57 square miles, of which 66.31 square miles, or 7.7 per cent, is water-surface. The total drainage above the outlet of Cayuga lake, including Keuka and Seneca lakes, is 1,571.66 square miles, of which the total water-surface of the three lakes amounts to 150.98 square miles, or 9.6 per cent.

The southeast portion of this watershed, drained by Fall creek, lies south and east of a large portion of the Owasco lake drainage basin and extends almost to the southern end of Skaneateles lake.

Seneca river enters the foot of Cayuga lake from the west and leaves it near the east side at the new controlling works, about 2 miles north of Cayuga, built in connection with the Barge canal. These works consist of 6 Taintor gates, each having a clear span of 30 feet.

For this lake certain water-surface elevations were assumed for use in the design of the Barge canal. These elevations, referred to Barge canal datum, are as follows: Average high water, elevation 384.0; canal pool, or low navigable stage, elevation 381.5; average low water, elevation 380.0. By average surface is meant the water-surface unaffected by wind.

Records of water-surface fluctuations in this lake in addition to those previously published in various reports of the Department of State Engineer, of gages maintained at Ithaca, Cayuga and Mud lock, are those of Professor C. L. Crandall of Cornell University, Ithaca, which consist of observations at varying intervals, beginning January, 1879.

CAYUGA LAKE AT ITHACA

This station was established August 6, 1905, and maintained by the United States Geological Survey until 1909. During the year 1909 it was taken over by this Department.

The original gage was on the breakwater at the head of Cayuga lake and about 150 feet from the lighthouse. The gage was moved about November 1, 1912, to Smith's boat-house opposite the Cornell boat-house about a mile up the inlet and remained at this place until December 19, 1914, when it was abandoned. It was reëstablished January 23, 1915, at its present location. On July 11, 1916, a standard Type A gage, No. 207, was erected on the south side of Lane's dock at Willow Point, on the east shore about ¾ mile from the head of the lake. It has a range of 6 feet, between elevations 381.0 and 387.0. The gage bench-mark is a nail in the root of a buttonwood tree, north of Lane's boat-house, and is at elevation 387.50 (B. C. datum).

The gage is read once daily — at 8 A. M. — to half-tenths.

Daily elevation of water-surface (B. C. datum) of CAYUGA LAKE AT WILLOW POINT, NEAR ITHACA, for the year ended June 30, 1918. William H. Lane, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	385.45	383.65	383.58	383.1	384.8	383.4	382.5	382.5	381.15	384.1	384.0	384.1
2	385.4	383.6	383.6	383.1	384.82	383.4	382.5	382.5	384.3	384.1	383.9	384.0
3	385.4	383.6	383.55	383.1	384.85	383.35	382.5	382.48	384.3	384.1	383.8	383.9
4	385.4	383.55	383.5	383.05	384.8	383.3	382.5	382.45	384.35	384.1	383.7	383.8
5	385.3	383.5	383.45	383.05	384.75	383.25	382.5	382.42	384.35	384.1	383.65	383.75
6	385.2	383.4	383.45	383.0	384.7	383.2	382.52	382.4	384.4	384.1	383.6	383.8
7	385.1	383.45	383.4	383.0	384.65	383.15	382.55	382.38	384.45	384.05	383.6	383.85
8	385.0	383.5	383.4	383.0	384.6	383.1	382.55	382.35	384.45	384.0	383.6	383.8
9	384.9	383.55	383.4	383.1	384.6	383.1	382.6	382.32	384.45	384.1	383.55	383.8
10	384.8	383.65	383.35	383.2	384.55	383.1	382.6	382.3	384.5	384.2	383.55	383.75
11	384.8	383.7	383.35	383.2	384.5	383.0	382.6	382.3	384.5	384.2	383.5	383.7
12	384.7	383.72	383.3	383.15	384.45	383.0	382.6	382.4	384.55	384.2	383.5	383.7
13	384.6	383.7	383.25	383.1	384.4	382.95	382.6	382.5	384.65	384.2	383.55	383.75
14	384.5	383.85	383.2	383.2	384.35	382.9	382.62	382.6	384.9	384.25	383.65	383.8
15	384.5	384.05	383.2	383.25	384.3	382.9	382.62	382.65	385.3	384.35	383.7	383.75
16	384.4	384.1	383.2	383.3	384.25	382.85	382.65	382.7	385.35	384.5	383.65	383.8
17	384.3	384.15	383.2	383.3	384.2	382.85	382.65	382.8	385.35	384.5	383.65	383.8
18	384.25	384.1	383.2	383.3	384.15	382.8	382.65	382.85	385.35	384.55	383.65	383.8
19	384.2	384.05	383.2	383.3	384.1	382.8	382.65	382.95	385.32	384.6	383.65	383.8
20	384.2	384.0	383.25	383.4	384.05	382.75	382.62	383.2	385.3	384.6	383.7	383.75
21	384.15	383.95	383.2	383.55	384.0	382.7	382.62	383.6	385.25	384.55	383.75	383.75
22	384.1	383.9	383.2	383.6	383.95	382.7	382.62	383.55	385.2	384.5	383.8	383.75
23	384.1	383.9	383.2	383.6	383.9	382.65	382.62	383.5	385.1	384.45	383.85	383.75
24	384.0	383.85	383.2	383.7	383.9	382.6	382.6	383.5	385.0	384.5	383.9	383.75
25	383.95	383.8	383.2	383.95	383.8	382.6	382.6	383.52	384.9	384.5	384.0	383.7
26	383.9	383.75	383.15	384.25	383.75	382.55	382.6	383.7	384.8	384.45	384.0	383.7
27	383.85	383.7	383.15	384.3	383.7	382.55	382.58	383.85	384.65	384.45	384.05	383.7
28	383.8	383.7	383.15	384.4	383.6	382.5	382.55	383.95	384.5	384.3	384.1	383.65
29	383.75	383.65	383.1	384.5	383.5	382.5	382.55	......	384.35	384.2	384.15	383.65
30	383.7	383.62	383.1	384.6	383.45	382.5	382.52	......	384.2	384.1	384.15	383.65
31	383.7	383.6	......	384.75	......	382.5	382.5	......	384.15	......	384.1	......

CAYUGA LAKE AT CAYUGA

This station is located at the village of Cayuga near the foot of Cayuga lake on the east shore. The station was established October 10, 1905, and was originally located near the crossing of the old Cayuga and Seneca canal and the Seneca river. It was moved to its present location May 16, 1914. On October 6, 1916, the direct-reading staff gage, on a pile opposite the N. Y. C. station, was replaced by a standard Type A gage, No. 206, in the same location. It has a range of 8 feet, between elevations 380.0 and 388.0. The gage bench-mark is on the southwest corner of concrete intake tank, on west side of N. Y. C. pumping station, and is at elevation 390.67 (B. C. datum).

The gage is read twice daily — at 7 A. M. and 5 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of CAYUGA LAKE AT CAYUGA, for the year ended June 30, 1918. T. Reagan, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	385.4	383.55	383.5	382.9	384.7	383.3	382.4	382.4	383.95	384.0	383.7	384.0
2.....	385.4	383.5	383.45	382.95	384.7	383.2	382.35	382.4	384.15	384.0	383.7	383.8
3.....	385.35	383.45	383.4	382.95	384.65	383.25	382.3	382.35	384.3	383.95	383.7	383.55
4.....	385.25	383.3	383.35	382.9	384.6	383.2	382.4	382.3	384.3	383.9	383.6	383.6
5.....	385.05	383.8	383.35	382.9	384.6	383.2	382.4	382.25	384.3	384.0	383.55	383.6
6.....	385.0	383.4	383.4	382.9	384.55	383.3	382.4	382.2	384.4	384.0	383.5	383.6
7.....	385.0	383.3	383.3	383.0	384.4	383.2	382.4	382.2	384.4	384.0	383.5	383.7
8.....	385.0	383.4	383.3	383.0	384.4	383.1	382.4	382.2	384.4	383.9	383.5	383.7
9.....	385.0	383.45	383.25	383.1	384.35	383.2	382.4	382.25	384.4	383.9	383.55	383.55
10.....	384.9	383.5	383.2	383.1	384.3	383.05	382.4	382.15	384.45	383.95	383.6	383.4
11.....	384.8	383.55	383.2	383.0	384.25	382.9	382.5	382.1	384.5	384.0	383.5	383.4
12.....	384.7	383.5	383.1	383.1	384.2	382.9	382.6	382.1	384.5	383.95	383.5	383.5
13.....	384.5	383.55	383.1	383.1	384.2	382.85	382.55	382.2	384.5	384.0	383.5	383.5
14.....	384.4	383.75	383.1	383.0	384.15	382.75	382.5	382.3	384.8	384.1	383.5	383.5
15.....	384.35	383.9	383.1	383.0	384.05	382.7	382.5	382.45	385.2	384.2	383.5	383.5
16.....	384.25	384.0	383.05	383.0	384.0	382.65	382.55	382.6	385.2	384.3	383.5	383.5
17.....	384.2	383.95	383.0	383.0	384.0	382.6	382.6	382.65	385.3	384.45	383.5	383.5
18.....	384.2	383.9	382.95	383.15	383.95	382.55	382.6	382.8	385.3	384.6	383.5	383.6
19.....	384.2	383.9	383.0	383.3	383.9	382.6	382.6	382.95	385.3	384.45	383.5	383.5
20.....	384.1	383.9	383.0	383.3	383.9	382.6	382.55	383.0	385.25	384.4	383.5	383.5
21.....	384.1	383.8	383.0	383.35	383.8	382.6	382.5	383.15	385.1	384.5	383.6	383.7
22.....	384.05	383.8	383.0	383.4	383.75	382.5	382.5	383.25	385.05	384.4	383.5	383.6
23.....	383.95	383.8	382.95	383.45	383.7	382.5	382.55	383.4	385.0	384.4	383.7	383.5
24.....	383.85	383.75	382.95	383.5	383.7	382.5	382.6	383.4	384.85	384.4	383.8	383.5
25.....	383.8	383.75	383.0	383.9	383.55	382.4	382.5	383.4	384.7	384.3	383.95	383.6
26.....	383.75	383.7	383.0	384.1	383.4	382.4	382.5	383.55	384.55	384.3	383.95	383.6
27.....	383.6	383.6	383.0	384.1	383.5	382.4	382.45	383.75	384.4	384.3	384.0	383.6
28.....	383.6	383.55	383.0	384.4	383.5	382.3	382.4	383.8	384.3	384.05	384.0	383.6
29.....	383.6	383.4	383.0	384.6	383.45	382.4	382.4	......	384.15	383.95	384.0	383.5
30.....	383.6	383.45	383.0	384.55	383.5	382.35	382.4	......	384.05	383.8	384.05	383.6
31.....	383.55	383.5	......	384.65	......	382.3	382.3	......	384.0	......	384.0	......

CLYDE RIVER

DESCRIPTION

Clyde river joins Seneca river in the Montezuma marsh near the foot of Cayuga lake. Clyde river is formed by the junction of Canandaigua outlet and Ganargua creek, at Lyons. Its total length is about 20 miles and the greater portion of its course lies through a broad, marshy valley.

It is canalized throughout for the Barge canal and formed into three navigable pools, having low navigable water-surfaces referred to Barge canal datum as follows:

Above its confluence with the Seneca river by a dam at Baldwinsville on the latter stream, elevation 374.0; above the movable dam at May's Point, elevation 380.0; and above dam at Barge canal lock No. 26, about 2.3 miles downstream from Clyde, elevation 386.0.

CLYDE RIVER AT LYONS

This station, located in the village of Lyons, was established September 27, 1905. A standard chain gage is attached to the downstream side of the Geneva street bridge and has a range of 14 feet, the zero of the gage being elevation 385.0 (B. C. datum). During the years 1907 to 1910, inclusive, discharge was obtained at this station, but at present it is maintained for water-surface elevations only.

The gage is read once daily — at 1 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of CLYDE RIVER AT GENEVA ST. LYONS, for the year ended June 30, 1918. D. C. Putnam, E. J. Weber and F. J. Reule, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	392.2	390.5	390.0	389.9	391.9	390.8	390.0	386.4	387.0	385.6	385.0	385.3
2	392.9	390.3	390.2	390.0	391.3	391.0	389.8	386.4	386.7	386.6	385.0	385.3
3	392.3	390.6	390.1	389.9	391.3	390.6	389.7	386.4	387.1	386.9	385.1	385.2
4	392.0	390.3	389.9	390.3	391.3	390.5	389.7	386.4	386.9	386.8	385.0	385.2
5	391.6	390.2	389.9	390.4	391.0	390.3	389.7	386.4	387.1	386.7	385.1	385.1
6	391.4	390.0	389.9	390.3	390.9	390.2	389.7	386.4	388.0	386.5	385.0	385.1
7	391.2	390.2	389.9	390.1	390.0	389.9	389.7	386.4	387.7	386.4	385.0	385.2
8	391.2	390.2	390.0	390.0	390.7	389.0	389.7	386.4	386.9	385.2	385.0	385.3
9	391.5	390.2	389.9	390.1	390.6	389.2	389.6	386.4	387.2	385.6	385.2	385.4
10	391.5	390.0	390.0	390.1	390.5	389.1	386.6	386.4	387.3	385.3	385.2	385.1
11	391.7	390.0	389.9	390.0	390.6	389.1	386.5	386.5	387.3	385.3	386.0	385.3
12	392.7	390.0	389.8	390.0	390.4	389.3	386.5	386.5	386.9	385.2	386.6	385.1
13	392.5	389.9	389.9	390.1	390.5	389.4	386.5	387.0	391.1	385.5	386.6	385.0
14	392.1	390.2	389.8	390.1	390.4	389.4	386.5	388.5	392.4	385.2	386.3	385.2
15	393.7	390.1	389.9	390.3	390.4	389.3	386.5	389.3	392.6	385.1	385.4	385.2
16	392.4	390.1	389.9	390.0	390.4	389.2	386.5	389.0	390.4	385.2	385.0	385.2
17	391.7	390.0	389.7	390.0	390.3	389.1	386.5	387.8	388.9	385.2	385.9	385.3
18	391.7	390.0	389.8	390.0	390.7	389.1	386.5	387.4	387.8	386.1	385.7	385.2
19	392.9	390.0	389.8	390.0	391.0	389.2	386.5	387.4	387.7	386.0	385.2	385.1
20	392.1	389.8	390.4	390.5	390.6	390.0	386.5	388.4	387.5	385.6	385.2	385.2
21	391.5	389.9	390.3	390.4	390.5	390.0	386.4	389.9	387.6	385.3	385.2	385.3
22	391.6	389.7	390.1	390.3	390.0	390.2	386.4	389.2	387.1	385.5	386.0	385.3
23	391.4	389.9	390.1	390.2	390.9	390.1	386.4	387.9	386.9	385.3	385.3	385.3
24	391.0	389.9	389.8	389.9	391.4	390.4	386.4	387.1	386.7	385.9	385.3	385.3
25	391.0	389.9	389.9	392.5	390.9	390.8	386.4	386.8	386.6	385.1	385.4	385.2
26	390.7	389.9	389.8	392.3	390.3	390.8	386.4	388.3	386.4	385.3	385.4	385.2
27	390.7	389.8	389.9	391.7	390.5	390.6	386.4	388.4	386.7	385.1	385.5	385.4
28	390.4	389.8	389.9	391.8	390.5	390.4	386.4	388.0	387.2	385.1	385.5	385.2
29	390.6	389.9	390.0	391.8	390.5	390.2	386.4	......	385.7	385.1	385.4	385.1
30	390.8	390.1	389.9	392.3	390.5	390.1	386.4	......	386.3	385.0	385.2	386.4
31	390.5	389.9	......	392.1	......	390.0	386.4	......	386.8	......	385.0	......

NOTE.— Drop in water-surface elevation on January 10 due to opening channel between river and land-line.

CLYDE RIVER AT CLYDE

This station, located in the village of Clyde, was established October 20, 1905, as a discharge station, but owing to Barge canal construction, it has been maintained since 1909 for water-surface elevations only. A standard chain gage, No. 214, is secured to the downstream side of the Sodus street bridge, the zero of the gage being elevation 375.79 (B. C. datum). There were several changes in the datum of the gage between April 1, 1916, and January 12, 1917, due to construction work and opening of gates at Barge canal lock No. 26.

The gage is read twice daily — at 7:30 A. M. and 5:30 to 6:30 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of CLYDE RIVER AT CLYDE, for the year ended June 30, 1918. H. K. Compson, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	387.2	386.7	386.6	386.6	387.05	386.85	386.5	386.0	386.35	385.25	384.15	384.2
2.....	387.1	386.7	386.6	386.7	386.75	386.95	386.4	386.45	386.35	385.35	384.1	384.0
3.....	387.0	386.7	386.65	386.7	386.75	386.85	386.4	386.4	386.4	385.65	384.05	384.3
4.....	387.2	386.7	386.6	386.8	386.65	386.8	386.4	386.4	386.35	385.5	384.1	384.15
5.....	386.95	376.65	386.6	386.9	386.65	386.75	386.4	386.4	386.45	385.4	384.1	384.5
6.....	386.75	386.6	386.6	386.8	386.7	386.65	386.3	386.4	386.65	385.4	384.15	384.4
7.....	387.0	386.6	386.6	386.7	386.55	386.5	386.4	386.4	386.45	385.2	384.2	384.3
8.....	387.0	386.6	386.6	386.7	386.8	386.45	386.4	386.4	386.2	384.15	384.15	384.3
9.....	387.05	386.6	386.6	386.7	386.65	386.3	386.4	386.4	386.35	384.45	384.25	384.35
10.....	387.1	386.6	386.6	386.7	386.7	386.5	386.5	386.4	386.6	384.55	384.25	384.2
11.....	387.1	386.6	386.6	386.7	386.8	386.5	386.4	386.4	386.7	384.2	384.9	384.45
12.....	387.3	386.6	386.6	386.7	386.8	386.5	386.4	386.35	386.5	384.15	384.7	384.15
13.....	387.45	386.55	386.6	386.8	386.8	386.5	386.4	386.45	387.75	384.4	385.7	384.2
14.....	387.3	386.6	386.55	386.8	386.7	386.5	386.3	386.55	388.45	384.15	385.25	384.3
15.....	387.6	386.6	386.5	386.8	386.75	386.5	386.3	386.85	388.95	384.1	384.3	384.25
16.....	387.4	386.6	386.6	386.7	386.7	386.5	386.3	386.85	388 0	384.3	384.2	384.3
17.....	387.0	386.6	386.7	386.7	386.7	386.5	386.3	386.5	386.1	384.2	384.5	384.1
18.....	386.75	386.6	386.5	386.7	386.7	386.5	386.3	386.15	385.45	384.8	384.4	384.25
19.....	387.15	386.6	386.6	386.8	386.7	386.5	386.3	386.55	385.55	384.7	384.25	384.2
20.....	387.1	386.55	386.8	386.8	386.8	386.6	386.25	386.7	385.35	384.35	384.25	384.4
21.....	387.1	386.5	386.9	386.8	386.8	386.6	386.2	387.3	385.5	384.3	384.25	384.3
22.....	387.1	386.5	386.8	386.8	386.9	386.5	386.2	387.1	385.3	384.35	384.4	384.3
23.....	387.05	386.5	386.7	386.8	387.0	386.5	386.2	386.8	385.2	384.05	384.3	384.3
24.....	386.95	386.5	386.7	386.9	387.0	386.6	386.2	386.45	385.3	384.4	384.3	384.3
25.....	386.8	386.5	386.7	387.3	387.0	386.65	386.2	386.4	385.25	384.1	384.15	384.25
26.....	386.8	386.5	386.7	387.6	386.9	386.8	386.2	386.55	385.2	384.25	384.25	384.2
27.....	386.8	386.5	386.7	387.3	386.8	386.8	386.3	386.85	385.25	384.1	384.2	384.35
28.....	386.75	386.5	386.75	387.0	386.8	386.65	386.3	386.6	385.45	384.15	384.25	384.55
29.....	386.75	386.5	386.7	387.0	386.7	386.6	386.3	......	384.1	384.1	384.35	384.2
30.....	386.8	386.6	386.6	387.1	386.7	386.4	386.3	......	385.05	384.1	384.15	384.35
31.....	386.75	386.6	......	387.1	......	386.5	386.25	......	385.25	......	384.15	......

GANARGUA CREEK

DESCRIPTION

Ganargua creek proper, often called Mud creek, rises near Victor. Its course is northeasterly to Macedon, then easterly. The tributary drainage is of the characteristic glacial kame type and the tributaries are rather sparse, flowing oftentimes first north and then south between elongated hills, until they find their way to Ganargua creek. The principal tributary of Ganargua creek is Mud creek, which rises in the hilly region near the head of Canandaigua lake and flows northward about 20 miles, entering Ganargua creek at Victor.

Ganargua creek, approaching from the south, has been incorporated in the Barge canal from about the western limits of the town of Palmyra eastward for about 2¾ miles to a spillway 360 feet long, 160 feet of which is at canal pool elevation 430.0 and the remainder one foot higher, over which it passes to the north towards Harrison's mill. About 1.2 miles east of where the creek enters the canal there is a 5-ft. x 7-ft. gate to supply water to Barnhart's mill and from below this mill to the spillway portions of the original creek channel have been straightened. Ganargua creek reënters the Barge canal just west of the village of Lyons and above the dam at lock No. 27, immediately above its confluence with Canandaigua outlet, forming the Clyde river.

GANARGUA CREEK NEAR PALMYRA

This station, established March 25, 1907, is located at Harrison's mill about 2½ miles east of Palmyra. The original gage, a staff fastened to the screen rack frame, was used until November 11, 1916, when a new standard gage, No. 217, was attached to the east wing wall of the south abutment of the highway bridge just above the mill. It has a range of 11 feet, between elevations 419.0 and 430.0. A standard bench-mark plug is set in the wing wall near the gage at elevation 428.0 (B. C. datum).

The gage was read twice daily to half-tenths and even hundredths — from July 1 to October 31 at 7 A. M. and 6 P. M., from November 1 to June 30 at 8 A. M. and 5 P. M.

Daily elevation of water-surface (B. C. datum) of Ganargua Creek near Palmyra, for the year ended June 30, 1918. C. H. Harrison, Observer

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	422.72	422.22	422.40	422.54	422.90	422.18	422.24	421.98	422.58	422.03	421.74	422.56
2.....	422.92	422.38	422.37	422.40	422.50	422.40	422.28	421.96	422.36	422.13	421.75	422.50
3.....	422.78	422.38	422.19	422.21	422.64	422.24	422.20	421.94	422.82	422.09	421.71	422.64
4.....	422.55	422.30	422.17	422.44	422.49	422.16	422.18	421.94	422.48	422.14	421.69	422.72
5.....	422.50	422.11	422.19	422.31	422.60	422.14	422.15	421.94	423.05	422.10	421.69	422.76
6.....	422.45	422.18	422.11	422.29	422.70	422.12	422.10	421.92	423.37	421.98	421.68	422.56
7.....	422.45	422.18	422.48	422.39	422.39	422.10	422.11	421.91	422.98	421.90	421.69	422.68
8.....	422.43	422.20	422.25	422.42	422.29	422.07	422.08	421.90	422.64	421.95	421.66	422.66
9.....	422.61	422.19	422.19	422.31	422.43	422.06	422.09	421.88	423.00	422.00	421.60	422.70
10.....	422.64	422.21	422.24	422.32	422.45	422.09	422.02	421.87	422.66	422.02	421.56	422.62
11.....	442.70	442.20	422.26	422.33	422.42	422.09	422.08	421.90	422.61	422.00	421.57	422.69
12.....	423.04	422.14	422.21	422.30	422.34	422.02	422.10	421.86	422.98	422.05	421.48	422.82
13.....	422.81	422.10	422.16	422.29	422.34	422.05	422.18	423.00	426.02	422.09	421.22	422.78
14.....	422.78	422.18	422.21	422.95	422.39	422.02	422.38	423.96	425.32	422.04	421.33	422.71
15.....	423.00	422.23	422.20	422.31	422.35	422.07	422.40	424.61	424.90	422.04	421.28	422.65
16.....	422.68	422.32	422.19	422.25	422.60	422.04	422.25	423.52	423.08	422.00	421.36	422.61
17.....	422.58	422.28	422.13	422.29	422.42	422.01	422.18	423.18	422.87	421.91	422.58	422.66
18.....	422.71	422.20	422.10	422.26	422.74	422.01	422.08	423.09	422.92	422.99	422.28	422.64
19.....	422.73	422.18	422.12	422.18	422.62	422.00	422.08	423.00	422.81	422.82	422.30	422.68
20.....	422.71	422.21	422.30	422.20	422.58	422.02	422.06	425.46	422.82	422.45	422.02	422.60
21.....	422.69	422.12	422.35	422.50	422.70	422.05	422.06	424.45	423.05	422.26	422.48	422.68
22.....	422.60	422.20	422.25	422.32	422.28	422.14	422.05	423.24	422.81	422.38	422.76	422.65
23.....	422.57	422.22	422.30	422.27	423.15	422.28	422.04	423.00	422.69	422.38	422.84	422.68
24.....	422.46	422.29	422.21	422.65	423.22	422.35	422.08	422.40	422.44	422.24	422.70	422.69
25.....	422.44	422.11	422.19	423.19	422.76	422.50	422.05	422.11	422.39	422.10	422.76	422.68
26.....	422.40	422.14	422.20	423.27	422.72	422.52	422.02	423.70	422.24	422.04	422.84	422.66
27.....	422.34	422.09	422.30	423.04	422.64	422.42	422.00	423.42	422.15	422.01	422.90	422.61
28.....	422.30	422.07	422.25	422.99	422.53	422.34	422.00	423.04	422.14	421.89	422.71	422.51
29.....	422.37	422.09	422.17	422.98	422.50	422.21	421.98	......	422.09	421.86	422.70	422.46
30.....	422.44	422.10	422.20	423.16	422.42	422.20	421.96	......	422.01	421.82	422.64	422.46
31.....	422.35	422.20	......	423.01	......	422.19	421.96	......	422.01	......	422.72	......

CANANDAIGUA OUTLET

DESCRIPTION

Canandaigua lake occupies one of the elongated depressions extending in nearly a north and south direction in the central lake region of New York. The drainage tributary to the lake is chiefly short lateral streams from the steep slopes of adjacent hillsides. The outflow from the lake is regulated to some extent by gates. The lake is at elevation about 686. From the foot of the lake at Canandaigua the outlet flows northward to Manchester, a distance of 7 miles. In this distance a fall of 100 feet occurs, which is chiefly concentrated at several water-power dams. From Manchester the stream flows easterly 12 miles and thence northeasterly 8 miles, joining Ganargua creek at Lyons to form the Clyde river. In the easterly portion of its course the stream winds with large bends through a broad sloping valley of fertile land. The fall is mostly utilized at water-power dams. The tributary drainage is moderately rolling and is interspersed with glacial kames. These are lenticular hills extending usually in a north and south direction. At Phelps, Flint creek, which is the largest tributary, enters the outlet. Flint creek drains a valley similar to the adjacent lake basins. This valley is not at present occupied by a lake, but contains an extensive swamp, reaching several miles southward from Gorham.

CANANDAIGUA OUTLET AT ALLOWAY

Location.— At a highway bridge crossing the stream in the village of Alloway about 2½ miles upstream, or south of Lyons.

Drainage area.— 440 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— September 18, 1906, to June 30, 1918.

Gage.— The original staff gage was replaced on November 7, 1916, by a standard Type A gage secured to the north wing of the west abutment of the highway bridge and has a range of 11½ feet, between elevations 402.5 and 414.0. A standard benchmark plug is set near the gage at elevation 410.0 (B. C. datum). The gage is read twice daily — between 7 and 8 A. M. and 4 and 7 P. M.— to half-tenths.

Discharge measurements.— Current-meter measurements made from the highway bridge, which has a span of 95 feet.

Control.— Except during low stages the control at this station is Slaters dam, located about two miles below the bridge, together with the slope upstream. Sluice-gates at the dam are kept open always, water passing over the crest only during extremely high flows.

Extremes of discharge.— Current year: Maximum stage recorded, elevation 412.1 on March 13 at 7:30 A. M.; discharge, estimated as 3,610 second-feet. Minimum stage recorded, elevation 404.0 on September 8, 9 and 28 and October 1; discharge, estimated as 85 second-feet.

1906–1918: Maximum stage recorded, March 29, 1916, at 8:30 A. M., elevation 412.5; discharge estimated as 3,870 second-feet. Minimum stage recorded, elevation 403.0 on December 24, 1916, at 4:20 P. M.; discharge, estimated at 2 second-feet.

Regulation.—Daily flow materially affected by operation of grist-mill a quarter mile above station.

Accuracy.— Discharge rating curve fairly well defined for flows below 1,000 second-feet. Higher flows estimated.

Discharge measurements of CANANDAIGUA OUTLET AT ALLOWAY, during the year ended June 30, 1918

DATE	Made by	Elevation of water-surface	Discharge
		Feet	*Sec.-ft.*
Oct. 31, 1917	M. W. Grimes and J. Labishiner	405.86	566
April 17, 1918	M. W. Grimes	404.99	337

Daily elevation of water-surface (B. C. datum) of CANANDAIGUA OUTLET AT ALLOWAY, for the year ended June 30, 1918. Carl Tuscher, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	406.25	404.62	404.22	404.05	405.60	405.22	405.25	405.22	407.48	406.05	405.02	404.70
2	406.65	404.58	404.22	404.10	405.50	405.08	405.22	405.22	407.50	406.00	405.00	404.70
3	406.05	404.55	404.25	404.15	405.40	405.25	405.25	405.25	408.22	405.85	405.00	404.70
4	406.12	404.50	404.20	404.35	405.30	404.90	405.22	405.20	407.45	405.80	405.00	404.70
5	405.65	404.48	404.15	404.32	405.00	404.72	405.20	405.20	407.50	405.68	404.90	404.70
6	405.50	404.50	404.18	404.18	404.85	404.72	405.20	405.20	409.08	405.62	404.90	404.70
7	405.40	404.50	404.15	404.22	404.85	404.78	405.22	405.22	408.52	405.50	404.88	404.70
8	405.40	404.50	404.05	404.20	404.75	404.80	405.20	405.30	408.15	405.52	404.82	404.70
9	405.40	404.35	404.05	404.20	404.70	404.72	405.20	405.38	408.15	405.78	404.80	404.70
10	405.50	404.20	404.20	404.25	404.60	404.60	405.28	405.48	408.10	405.52	404.85	404.70
11	405.50	404.20	404.32	404.20	404.60	404.72	405.30	405.52	408.15	405.52	404.95	404.58
12	405.90	404.20	404.25	404.20	404.50	404.60	405.30	405.60	409.00	405.42	404.92	404.70
13	406.12	404.18	404.32	404.22	404.55	404.70	405.22	407.12	411.45	405.35	404.92	404.60
14	405.90	404.50	404.25	404.20	404.50	404.72	405.15	409.48	410.15	405.40	404.90	404.60
15	407.70	404.50	404.15	404.20	404.50	404.75	405.20	409.78	409.75	405.30	404.82	404.52
16	406.82	404.45	404.15	404.25	404.45	404.90	405.20	409.30	409.20	405.20	404.72	404.50
17	405.80	404.40	404.15	404.22	404.40	404.95	405.20	408.25	408.70	405.18	404.70	404.52
18	405.80	404.20	404.22	404.15	404.40	405.10	405.18	408.20	408.25	406.60	404.40	404.60
19	406.75	404.35	404.20	404.12	404.40	405.10	405.20	408.12	407.90	406.20	404.62	404.60
20	405.78	404.50	404.70	404.18	404.40	405.10	405.25	409.75	407.70	405.85	404.52	404.48
21	405.40	404.50	404.50	404.22	404.50	405.10	405.22	408.58	407.65	405.80	404.72	404.30
22	405.48	404.35	404.25	404.40	404.55	405.10	405.20	408.45	407.45	406.60	404.70	404.65
23	405.40	404.20	404.15	404.40	404.52	405.10	405.22	407.50	407.15	406.40	404.70	404.65
24	405.20	404.20	404.22	404.80	404.50	405.22	405.20	407.20	406.80	405.85	404.72	404.60
25	405.15	404.35	404.15	406.50	404.35	405.30	405.25	407.30	406.70	405.60	404.82	404.60
26	405.10	404.20	404.25	406.12	404.22	405.32	405.20	409.90	406.60	405.42	404.80	404.60
27	405.10	404.20	404.32	406.05	404.42	405.30	405.25	409.65	406.35	405.40	404.80	404.58
28	404.60	404.15	404.10	405.20	404.58	405.35	405.20	409.40	406.20	405.12	404.68	404.50
29	404.75	404.28	404.22	405.45	404.75	405.42	405.20	......	406.20	405.10	404.62	404.45
30	404.90	404.35	404.25	406.15	404.82	405.50	405.18	......	406.20	405.00	404.65	404.78
31	404.92	404.30	......	405.85	......	405.40	405.22	......	406.10	......	404.68	......

Daily discharge, in second-feet, of CANANDAIGUA OUTLET AT ALLOWAY, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	755	220	123	93	522	400	......	......	......	682	338	242
2	907	208	123	101	490	356	......	......	......	664	332	242
3	682	200	129	110	458	410	......	......	......	610	332	242
4	706	186	120	150	426	301	......	......	......	592	332	242
5	539	181	110	143	332	248	......	......	......	549	301	242
6	490	186	116	116	285	248	......	......	......	528	301	242
7	458	186	110	123	285	265	......	......	......	490	295	242
8	458	186	93	120	256	271	......	......	......	496	277	242
9	458	150	93	120	242	248	......	......	......	584	271	242
10	490	120	120	129	214	214	......	......	......	496	285	242
11	490	120	143	120	214	248	......	......	......	496	317	208
12	628	120	129	120	186	214	......	......	......	464	307	242
13	706	116	143	123	200	242	......	......	......	442	307	214
14	628	186	129	120	186	248	......	......	2,520	456	301	214
15	1,340	186	110	120	186	256	......	......	2,300	426	277	192
16	971	173	110	129	173	301	......	......	2,030	394	248	186
17	592	161	110	123	161	317	......	......	1,790	388	242	192
18	592	120	123	110	161	362	......	......	1,580	888	161	214
19	945	150	120	105	161	362	......	......	1,420	736	220	214
20	584	186	242	116	161	362	......	......	1,340	610	192	181
21	458	186	186	123	186	362	......	......	1,320	592	248	139
22	483	150	129	161	200	362	......	......	1,220	888	242	228
23	458	120	110	161	192	362	......	......	1,100	812	242	228
24	394	120	123	271	186	400	......	......	964	610	248	214
25	378	150	110	850	150	426	......	......	926	522	277	214
26	362	120	129	706	123	432	......	......	888	464	271	214
27	362	120	143	682	166	426	......	......	793	458	271	208
28	214	110	101	394	208	442	......	......	736	368	236	186
29	256	135	123	474	256	464	......	......	736	362	220	173
30	301	150	129	718	277	490	......	......	736	332	228	265
31	307	139	......	610	......	458	......	......	700	......	236	......
Mean	561	156	126	243	241	339	......	......	......	547	270	218

NOTE.— Discharge for December probably affected by ice. January 1 to March 13, ice period; not published. Discharge rating curve fairly well defined for flows below 1,000 second-feet; higher flows approximate.

Monthly discharge of CANANDAIGUA OUTLET AT ALLOWAY, for the year ended June 30, 1918

[Drainage area, 440 square miles.]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	1,340	214	561	1.28	1.48
August	220	110	156	0.355	0.41
September	242	93	126	0.286	0.32
October	850	93	243	0.552	0.64
November	522	123	241	0.548	0.61
December	490	214	339	0.770	0.89
January	....	....	....	....	....
February	....	....	....	....	....
March	....	....	....	....	....
April	888	332	547	1.24	1.38
May	338	161	270	0.614	0.71
June	265	139	218	0.495	0.55

OWASCO OUTLET

DESCRIPTION

Owasco lake is one of the finger lake group in central New York and is generally rated as the sixth in size. It is about 11 miles long and has a maximum width of 1.25 miles. It has a water-surface area of approximately 10.4 square miles and is drained by Owasco outlet.

The lake extends in a north and south direction and lies wholly within the boundaries of Cayuga county. The southern half of the lake, on both the east and west sides, is flanked by steep, sloping hills, rising to elevations of 500 to 800 feet above the lake surface, which is at an elevation of 710 feet above tide-water. These hills are rather deeply indented by numerous small streams that enter the lake at almost right angles from either side. To the south of the head of the lake and extending for some 17 or 18 miles is a rather narrow valley, the floor of which is about one-half mile wide at the lake and narrows as it approaches the southern extremity. This valley is drained by Owasco inlet, which rises near Freeville in Tompkins county.

The dividing line for the drainage basin is at an elevation of from 700 to 1,300 feet above sea-level on the west and attains an altitude of some 1,600 feet on the east. The western line falls about 2 miles back from the lake; the eastern divide extends some 7 or 8 miles. The general shape of the drainage basin is long and narrow, the northern end terminating on the shores of Seneca river, into which the waters drain.

Owasco lake occupies about the center of the drainage basin north and south. Northward from the foot of the lake the descent is very rapid, there being 325 feet fall in the 17 miles between the outlet and Seneca river. One hundred and ten feet of this fall is practically within the city limits of Auburn and is utilized by the numerous manufacturing interests in that city. From a point just above Troopsville to Port Byron, a distance of about 5 miles, there is a fall of 130 feet, very little of which is developed. A State dam about one mile below the outlet of the lake practically controls the low and medium flow of this drainage basin. The drainage area is representative of the farming district in central New York and is fairly well timbered.

OWASCO OUTLET NEAR AUBURN

Location.— On the farm of Charles H. Pearce, 2 miles below the center of the city of Auburn, Cayuga county, and 3¾ miles below the State dam at the outlet of Owasco lake.

Drainage area.— 206 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— November 17, 1912, to June 30, 1918.

Gage.— Gurley water-stage recorder in a concrete shelter on the left bank on the farm of Charles H. Pearce; inspected by Charles S. Pearce.

Discharge measurements.— Made by wading directly opposite the gage in low water and from a cable at the same section in high water.

Channel and control.— A low concrete control has been constructed about 15 feet below the gage. Crest of control is 1 foot wide and the slopes of both upstream and downstream faces are 1 on 2. A small horizontal apron built on a level with the bed of the stream extends downstream 2½ feet from toe of dam. Mean elevation of the left end of the dam for a distance of 50 feet is at gage height 1.28 feet; the remaining 50 feet of the crest of the dam is at gage height 2.12 feet.

Extremes of discharge.— Current year: Maximum stage during year, from water-stage recorder, 3.50 feet at 3 A. M., March 17; discharge, 1,100 second-feet. Minimum stage from water-stage recorder, 1.48 feet at 10 P. M., October 7; discharge, 12 second-feet.

1912–1918: Maximum stage, 6.4 feet during period March 25 to 30, 1913, determined by leveling from flood-marks; discharge, 2,750 second-feet. Minimum stage from water-stage recorder, 1.41 at 1 A. M., October 15, 1915; discharge, 5.6 second-feet.

Ice.— Stage-discharge relation seldom affected by ice.

Diversions.— An average flow of about 10 second-feet is pumped from Owasco lake for the municipal water-supply of the city of Auburn. Proportion returning to stream above the gaging station is not known.

Regulation.— Large diurnal fluctuation in flow during low-water periods, due to mills in the city of Auburn; seasonal flow regulated at the State dam at the outlet of Owasco lake.

Accuracy.—Stage-discharge relation permanent; not seriously affected by ice during year. Rating curve well defined between 1 and 1,700 second-feet. Operation of the water-stage recorder satisfactory during periods when it was in operation. Daily discharge ascertained by averaging the hourly discharge. Records excellent.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

No discharge measurements were made during the current year.

Daily discharge, in second-feet, of OWASCO OUTLET NEAR AUBURN, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	926	......	278	181	534	271	......	a 175	434	484	439	414
2	919	......	248	184	509	267	......	a 170	420	471	407	393
3	899	......	241	176	522	261	......	125	353	468	394	401
4	854	......	255	181	525	274	......	154	317	458	389	402
5	825	......	242	188	507	263	......	167	340	422	332	369
6	698	......	234	158	499	267	......	174	352	434	284	337
7	599	......	230	48	474	281	......	139	427	361	298	332
8	579	......	245	155	458	256	......	139	506	237	284	286
9	573	......	245	209	a 455	254	......	130	526	239	269	205
10	562	......	247	212	a 445	245	......	114	558	202	214	190
11	506	......	241	212	a 435	251	145	135	795	301	265	181
12	493	......	236	273	a 425	263	172	160	937	335	265	192
13	495	......	228	213	a 420	259	124	157	923	336	276	171
14	394	176	221	205	a 412	196	203	156	921	429	203	179
15	273	197	217	219	a 404	249	150	169	931	524	203	161
16	286	194	189	211	a 395	244	163	160	946	539	267	160
17	346	214	212	211	388	a 225	156	162	921	560	208	184
18	425	222	203	211	330	a 220	161	181	876	596	205	147
19	419	211	207	244	322	214	158	184	784	643	196	171
20	418	242	207	206	324	205	195	199	748	640	194	175
21	397	235	198	64	313	205	193	175	718	612	174	242
22	357	236	180	232	303	194	176	189	689	622	194	315
23	320	232	182	359	309	202	171	170	591	628	348	258
24	305	223	197	376	298	292	178	173	a 578	626	396	235
25	262	236	185	428	296	193	153	214	a 580	580	390	226
26	234	188	181	457	255	202	181	262	a 570	522	373	......
27	232	229	177	468	289	202	175	304	a 560	495	398	......
28	222	211	176	452	287	149	152	351	a 550	526	402	......
29	220	221	186	492	278	202	140	......	a 530	516	407	......
30	237	253	174	537	264	a 292	146	......	515	480	402	......
31	260	270	......	545	......	a 206	131	......	504	......	414	......
Mean	460	225	215	268	390	229	174	178	626	476	306	247

a Estimated; based on lake gage heights.

NOTE.— Mean discharge estimated as follows: August 1 to 13, inclusive, 230 second-feet; January 1 to 10, inclusive, 198 second-feet; June 26 to 30, inclusive, 216 second-feet.

Monthly discharge of OWASCO OUTLET NEAR AUBURN, for the year ended June 30, 1918

[Drainage area, 206 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	926	*a* 220	469	2.28	2.63
August	....	176	225	1.09	1.26
September	278	*a* 174	215	1.04	1.16
October	545	*a* 48	268	1.30	1.50
November	534	264	390	1.89	2.11
December	274	149	229	1.11	1.28
January	203	*a* 124	174	0.845	0.97
February	351	*a* 114	178	0.864	0.90
March	946	317	626	3.04	3.51
April	643	202	476	2.31	2.58
May	439	174	306	1.49	1.72
June	414	147	247	1.20	1.34
The year	946	47.9	319	1.55	21.08

a Sunday.

ONONDAGA LAKE

DESCRIPTION

Onondaga lake, situated north of the city of Syracuse, is about 4½ miles long, having an average width of 1 mile and a surface area of 4.7 square miles. The surface elevation is about 365, Barge canal datum, and has an average annual range of nearly 6 feet.

The drainage area, including the lake surface, is about 288 square miles, lying mostly to the south and southwest. Included in this area is Otisco lake with a water-surface of 3.3 square miles, discharging through Nine-Mile creek, and a group of small lakes drained by Onondaga creek. Besides these principal tributaries there are a few small streams entering the lake from the north and east.

Onondaga lake discharges into the Seneca river through Onondaga outlet, which is canalized as a part of the Barge canal system. A low navigable stage at elevation 363.0 will be maintained on this lake by the dam on the Oswego river at Phoenix.

ONONDAGA LAKE AT SYRACUSE

This station is located at the head, or south end of Onondaga lake. Until October 1, 1916, the water-surface was obtained by measuring down from a reference point on the west abutment of the New York Central railroad bridge over Onondaga creek. Since that date the reference point has been located at the new New York Central railroad bridge over the terminal channel at Syracuse, being on the top of the pier on the east side of the channel at the angle in the pier near the north girder of the bridge.

The gage is read once daily by an employee from the office of the Division Engineer.

Daily elevation of water-surface (B. C. datum) of ONONDAGA LAKE AT SYRACUSE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	365.62	363.98	364.09	364.12	364.77	364.20	*a*	*a*	365.80	365.4	365.2	364.2
2.....	365.62	364.01	*a*	363.90	364.66	*a*	363.62	363.90	365.50	365.2	*a*	364.6
3.....	365.45	363.84	364.10	363.67	364.62	364.43	363.55	*a*	*a*	364.9	364.5	364.6
4.....	*a*	363.90	364.02	363.68	364.41	364.27	363.54	*a*	365.38	*a*	364.5	*a*
5.....	365.17	*a*	*a*	363.67	364.54	364.42	363.50	*a*	365.30	364.8	*a*	364.3
6.....	365.05	364.06	363.98	363.77	*a*	364.37	*a*	364.20	365.60	364.7	364.3	364.2
7.....	364.96	363.85	363.90	363.71	364.39	364.13	363.69	*a*	365.85	*a*	364.2	364.1
8.....	*a*	363.76	363.94	*a*	364.35	364.00	*a*	364.15	365.75	364.7	364.4	364.1
9.....	364.84	363.75	*a*	363.96	364.38	364.08	363.45	364.17	365.92	364.9	364.1	*a*
10.....	364.92	363.69	363.91	363.85	364.32	*a*	*a*	*a*	*a*	364.9	364.1	364.5
11.....	364.92	363.59	364.00	363.87	364.24	364.09	363.32	364.35	366.10	364.9	364.0	364.3
12.....	364.94	......	363.97	363.98	364.38	364.12	363.45	364.42	365.90	364.9	*a*	364.2
13.....	365.87	363.70	363.92	363.91	364.36	364.24	*a*	364.52	366.30	365.1	*a*	364.2
14.....	365.87	363.65	363.87	*a*	364.35	*a*	363.70	364.55	366.80	*a*	*a*	364.1
15.....	364.96	363.66	363.92	364.12	364.26	*a*	363.75	364.90	367.40	365.1	364.4	364.1
16.....	364.99	363.69	*a*	364.18	364.33	*a*	363.88	365.35	367.60	364.9	364.3	*a*
17.....	364.82	363.74	364.02	363.94	364.27	364.44	363.65	*a*	*a*	364.6	364.2	363.9
18.....	364.56	363.76	363.97	363.89	364.48	364.40	363.77	365.40	367.80	364.9	364.2	363.8
19.....	364.45	......	364.09	*a*	364.50	364.37	363.90	365.08	367.60	365.3	*a*	363.6
20.....	364.47	364.06	364.01	364.02	364.26	364.37	*a*	365.90	367.60	365.4	364.2	363.7
21.....	364.52	363.98	364.07	364.07	364.18	364.41	364.06	366.10	367.50	*a*	364.2	*a*
22.....	*a*	363.93	364.02	364.10	364.25	364.29	364.10	366.00	367.50	365.6	364.2	364.1
23.....	364.34	363.97	*a*	364.01	364.37	*a*	*a*	365.85	367.50	365.6	364.4	*a*
24.....	364.33	363.98	363.91	364.19	364.32	364.58	364.12	*a*	367.20	365.3	364.3	364.4
25.....	364.29	364.02	363.90	364.27	*a*	*a*	363.95	364.95	367.10	364.9	364.3	363.8
26.....	364.32	......	363.99	364.45	364.42	364.62	363.80	365.90	366.80	364.8	*a*	363.8
27.....	364.12	364.27	364.04	364.43	364.35	*a*	*a*	366.07	*a*	364.8	364.4	363.8
28.....	364.15	364.20	364.04	364.34	364.26	364.30	364.00	366.03	366.60	*a*	364.4	363.8
29.....	*a*	364.12	364.02	364.52	*a*	363.85	364.10	......	366.30	365.2	364.4	363.8
30.....	364.09	364.13	*a*	364.37	364.30	*a*	364.00	......	366.20	365.2	*a*	*a*
31.....	364.02	364.09	......	364.59	......	363.77	363.99	......	*a*	......	364.1	......

a No record.

ONONDAGA OUTLET AT LONG BRANCH

This station was located at the outlet of Onondaga lake at Long Branch. The staff gage was secured to a willow tree on the right, or east bank of the stream about 300 feet above the highway bridge over the outlet at Long Branch and was maintained for water-surface elevations only. This station was abandoned on September 30, 1917. A new station was established at the Long Branch boat-house on Onondaga outlet on December 19, 1917 (see below). This new station will supersede the one at Long Branch and the one formerly published as "Seneca River at Mud Lock, near Long Branch."

It was read once daily — at 8 A. M. — and indicated water-surface of Onondaga lake.

Daily elevation of water-surface (B. C. datum) of ONONDAGA OUTLET NEAR LONG BRANCH, LIVERPOOL P. O., for the year ended June 30, 1918. Mark Kennedy, Observer

DAY	July	Aug.	Sept.	DAY	July	Aug.	Sept.
1	365.7	364.0	364.1	16	365.0	364.1	364.0
2	365.7	364.0	*a*	17	364.9	364.1	363.9
3	365.6	364.0	*a*	18	364.9	364.2	363.9
4	365.6	364.0	*a*	19	364.8	364.2	363.9
5	365.6	363.9	*a*	20	364.8	364.1	364.0
6	365.6	363.9	*a*	21	364.7	364.1	364.0
7	365.5	363.9	*a*	22	364.6	364.2	364.0
8	365.5	363.9	*a*	23	364.5	364.2	364.0
9	365.5	363.9	364.0	24	364.4	364.2	364.0
10	365.3	364.0	364.0	25	364.3	364.2	364.0
11	365.3	364.0	364.0	26	364.3	364.2	364.0
12	365.2	364.0	364.0	27	364.2	364.1	364.0
13	365.1	364.1	364.1	28	364.1	364.1	364.0
14	365.0	364.1	364.1	29	364.1	364.1	364.0
15	365.0	364.1	364.0	30	364.0	364.1	364.0
				31	364.0	364.1	......

a No record.
NOTE.— Station discontinued September 30, 1917.

ONONDAGA OUTLET AT LONG BRANCH BOAT-HOUSE

This station, established December 19, 1917, is located on Onondaga outlet, about 1,000 feet below the foot of the lake. The gage, No. 212, a standard Type A gage, is secured to the southeast corner of the Long Branch boat-house and has a range of 8 feet, between elevations 363.0 and 371.0. The gage bench-mark is a nail in the root of a maple tree west of the trolley tracks, west approach to outlet bridge, and is at elevation 374.21 (B. C. datum). This station supersedes the stations formerly published as "Onondaga Outlet at Long Branch" and "Seneca River at Mud Lock, near Long Branch." These stations were abandoned on September 30, 1917, and October 31, 1917, respectively.

The gage was read once daily from January 1 to March 1 and twice daily since that date.

Daily elevation of water-surface (B. C. datum) of ONONDAGA OUTLET AT LONG BRANCH BOAT-HOUSE, for the year ended June 30, 1918

DAY	Jan.	Feb.	Mar.	April	May	June
1	363.7	363.7	365.62	365.25	364.85	364.35
2	363.6	363.6	365.35	364.88	364.75	364.55
3	363.5	363.7	365.25	364.62	364.60	364.62
4	363.4	364.0	365.25	364.60	364.52	364.48
5	363.3	363.9	365.15	364.60	364.35	364.38
6	363.3	364.1	365.32	364.52	364.25	364.28
7	363.4	364.0	365.45	364.50	364.28	364.10
8	363.5	363.9	365.65	364.52	364.25	364.20
9	363.4	364.0	365.70	364.72	364.08	364.45
10	363.4	364.0	365.60	364.72	364.00	364.62
11	363.3	364.1	365.85	364.72	364.02	364.30
12	363.3	364.2	365.62	364.82	364.15	364.10
13	363.5	364.1	365.90	364.98	364.45	364.00
14	363.7	364.2	366.50	365.12	364.48	364.08
15	363.8	364.4	367.15	365.02	364.40	364.05
16	363.8	364.9	367.38	364.70	364.38	364.00
17	363.7	365.2	367.40	364.50	364.22	363.92
18	363.7	365.2	367.50	364.78	364.20	363.80
19	363.9	364.9	367.42	365.18	364.10	363.62
20	364.0	365.2	367.35	365.38	364.20	363.82
21	364.0	365.9	367.28	365.50	364.30	364.15
22	364.1	365.9	367.22	365.58	364.38	364.22
23	364.0	365.6	367.12	365.45	364.38	364.15
24	363.9	365.2	367.00	365.10	364.32	364.00
25	363.8	364.85	366.88	364.78	364.22	363.82
26	363.7	365.1	366.70	364.75	364.32	363.82
27	363.8	365.7	366.42	364.82	364.40	363.82
28	363.9	365.85	366.25	364.98	364.38	363.85
29	364.0	......	366.08	365.12	364.45	363.88
30	363.8	......	......	365.00	364.32	364.00
31	363.7	......	......	......	364.28	......

ONONDAGA CREEK

DESCRIPTION

Onondaga creek has its source in the extreme southerly part of Onondaga county and flows in a northerly direction to Onondaga lake at Syracuse.

The west branch of Onondaga creek rises in the hilly region a few miles southwest of Syracuse and enters the main stream about 1½ miles south of Indian village.

WEST BRANCH OF ONONDAGA CREEK AT SOUTH ONONDAGA

Location.— At the highway bridge in the village of South Onondaga, Onondaga county, about 1¾ miles above the mouth of the creek and about 10 miles above the city of Syracuse.

Drainage area.— 20.8 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— August 22, 1916, to June 30, 1918, when the station was discontinued.

Gage.— Staff on downstream side of right abutment of bridge.

Discharge measurements.— Made from bridge or by wading.

Channel and control.— Fine and coarse gravel; shifting.

Extremes of stage.— Current year: Maximum stage recorded, 3.43 feet at 7:20 A. M., February 20. Minimum stage recorded, 0.90 foot at 6:35 A. M., September 25.

Ice.— Stage-discharge relation probably affected by ice.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Sufficient data have not been obtained for determination of discharge.

Discharge measurements of WEST BRANCH OF ONONDAGA CREEK AT SOUTH ONONDAGA, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1918		*Feet*	*Sec.-ft.*
April 5	E. D. Burchard	1.76	19

Daily gage height, in feet, of WEST BRANCH OF ONONDAGA CREEK AT SOUTH ONONDAGA, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	1.54	1.01	1.06	1.18	1.62	1.60	......	......	1.84	1.88	1.73	1.37
2	1.56	1.01	1.03	1.70	1.52	1.47	......	......	1.86	1.89	1.67	1.33
3	1.38	1.00	1.01	1.40	1.45	1.38	......	......	1.88	1.86	1.61	1.30
4	1.33	1.00	.98	1.48	1.39	1.35	......	......	1.79	1.80	1.65	1.31
5	1.27	1.00	.97	1.41	1.37	1.34	......	......	2.11	1.79	1.59	1.31

Daily gage height, in feet, of WEST BRANCH OF ONONDAGA CREEK AT SOUTH ONONDAGA, for the year ended June 30, 1918 — *Continued*

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
6	1.23	.99	1.02	1.38	1.33	1.27	......	......	2.63	1.75	1.58	1.38
7	1.21	.99	.99	1.14	1.36	1.36	......	......	2.06	1.74	1.55	1.69
8	1.19	.97	1.02	1.59	1.28	1.16	......	......	1.95	1.81	1.53	1.41
9	1.23	1.04	.98	1.29	1.28	1.22	......	......	1.83	2.45	1.52	1.34
10	1.31	1.03	1.04	1.15	1.27	......	......	......	2.53	1.93	1.59	1.44
11	1.29	1.01	.98	1.11	1.27	......	......	......	2.11	1.96	1.60	1.34
12	1.26	.98	.98	1.16	1.27	......	......	2.34	2.24	1.95	1.57	1.86
13	1.32	.95	.97	1.20	1.24	......	......	2.49	2.43	2.39	1.79	1.65
14	1.33	1.18	.95	1.13	1.18	......	......	2.26	3.03	2.15	1.78	1.51
15	1.48	1.06	.95	1.24	1.19	......	......	3.47	2.75	1.93	1.58	1.44
16	1.45	.99	.95	1.15	1.25	......	......	2.72	2.46	1.85	1.51	1.35
17	1.27	1.01	1.02	1.09	1.26	......	......	......	2.49	1.84	1.47	1.33
18	1.22	.98	1.01	1.60	1.21	......	......	......	2.21	2.34	1.43	1.32
19	1.21	.97	.95	1.68	1.27	......	......	2.04	2.19	2.04	1.40	1.29
20	1.16	.95	.99	1.82	1.30	......	......	3.15	2.21	1.89	1.57	1.28
21	1.16	.99	.95	1.31	1.26	......	......	2.17	2.22	1.92	1.78	1.28
22	1.14	.97	.94	1.24	1.39	......	......	2.41	2.17	2.60	1.54	1.51
23	1.12	.95	.94	1.25	1.38	......	......	2.06	2.27	1.96	1.61	1.67
24	1.09	1.04	.92	1.50	1.30	......	......	1.76	1.97	1.93	1.45	1.45
25	1.08	.98	.91	2.17	1.20	......	......	2.01	1.97	1.83	1.45	1.37
26	1.06	.96	.93	1.77	1.21	......	......	3.14	1.94	1.78	1.54	1.33
27	1.07	.97	.97	1.51	1.20	......	......	2.35	1.92	1.73	1.50	1.28
28	1.12	.95	1.03	1.65	1.23	......	......	2.05	1.85	1.69	1.45	1.29
29	1.10	1.12	1.01	1.59	1.24	......	......	......	1.89	1.63	1.46	1.49
30	1.07	1.05	1.10	1.96	1.32	......	......	......	1.88	1.64	1.44	1.80
31	1.03	1.01	......	1.79	......	......	......	......	1.88	......	1.39	......

NOTE.— Gage height observations suspended, because of ice, from December 10 to February 11, inclusive.

ONEIDA RIVER BASIN

DESCRIPTION

The territory drained by the Oneida river is, in shape, roughly a square of about 40 miles on the side, lying west of the upper portion of the Mohawk drainage basin. From its northeast corner a peninsula-like area of about 80 square miles, drained by the upper portion of East branch, Fish creek, projects northward between the Salmon and Black river drainage areas.

The total drainage area is 1,493 square miles, of which the run-off from 1,353 square miles, or slightly over 90 per cent, passes through Oneida lake, which has a water-surface of 78 square miles, or 5¾ per cent of the area above its outlet, and an annual range of surface of about 3 to 6 feet, which together with the dam and gate at Caughdenoy offers facilities for considerable regulation of the flow in the Oneida river.

There is a small amount of local storage for and diversion to the old Erie canal in the southern portion of this basin. Water is also diverted into this drainage area from the Black and

Mohawk basins through the summit levels of the old Erie and new Barge canals.

The overflow from this basin through the Oneida river unites with that of the Seneca river at Three River Point to form the Oswego river.

For table of areas of this drainage basin see page 64.

ONEIDA RIVER

The Oneida river is a winding stream about 17¾ miles long, extending from Brewerton at the outlet of Oneida lake to Three River Point, where it unites with the Seneca to form the Oswego river.

The Oneida river has been canalized in connection with the construction of the Barge canal. Two large and two smaller bends have been cut off, but on the largest cut-off, that opposite the new Caughdenoy dam, is located Barge canal lock No. 23 and normally only that portion of the flow of the river required for canal purposes at the lock passes through this channel.

About 4 miles below Brewerton and about 2½ miles below the east end of the Caughdenoy cut-off and about 600 feet above the old lock and highway bridge, a dam has been constructed to retain a low navigable surface in Oneida lake and above lock No. 23 at elevation 369.9. This dam is a concrete structure with a straight ogee type crest 415 feet long at elevation 369.63. In the old canal lock a vertical lift-gate has been constructed with a clear span of 30 feet 9 inches and sill at elevation 362.73. The dam was completed in the summer of 1909, and the gate, January 1, 1914.

Below lock No. 23 a low navigable surface is maintained at elevation 363.0 by the dam on the Oswego river at Phoenix.

Occasional apparent inconsistencies in the tables of water-surface elevation, where the water-level at an upstream gage is recorded slightly lower than at a point farther downstream, are, as a rule, not the result of actual mistakes, but arise from the fact that most of the gages are read to the nearest tenth foot only, and also from the fact that streams and lakes are sometimes affected by wind to such an extent as to cause the water-surface to be slightly higher at the downstream end of a level reach than at the upstream end.

ONEIDA RIVER AT BREWERTON

This station is located on the Oneida river at Brewerton about 1,500 feet downstream from Oneida lake and indicates lake surface very closely. It was established April 22, 1904, to determine water-surface elevations only. The staff gage on the downstream side of the New York State boat-house was superseded on July 21, 1916, by a standard Type A gage. This gage, No. 185, is secured to the east end of the concrete dock below the Brewerton highway bridge and has a range of 8 feet, between elevations 368.0 and 376.0. The gage bench-mark is a square chisel cut, in top of concrete dock wall about 3 feet from the end and is at elevation 375.372 (B. C. datum).

The gage is read once daily to half-tenths.

Daily elevation of water-surface (B. C. datum) of ONEIDA RIVER AT BREWERTON, for the year ended June 30, 1918. A. R. Merritt, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	371.3	370.4	370.5	370.0	371.4	370.3	370.3	370.35	371.6	373.0	371.95	371.25
2	371.4	370.4	370.55	370.0	371.5	370.3	370.3	370.35	371.65	373.0	371.95	371.2
3	371.35	370.35	370.55	370.0	371.4	370.4	370.3	370.3	371.6	373.05	371.85	371.15
4	371.3	370.3	370.5	369.0	371.4	370.4	370.3	370.3	371.6	373.1	371.8	371.1
5	371.25	370.2	370.55	370.2	371.4	370.4	370.3	370.3	371.65	373.05	371.75	371.0
6	371.25	370.1	370.55	370.2	371.3	370.35	370.35	370.3	371.7	372.95	371.7	371.0
7	371.2	370.1	370.6	370.25	371.3	370.4	370.3	370.25	371.7	372.85	371.7	371.0
8	371.2	370.1	370.65	370.2	371.2	370.3	370.3	370.25	371.7	372.8	371.5	371.0
9	371.25	370.1	370.55	370.4	371.2	370.3	370.3	370.2	371.65	372.85	371.5	371.0
10	371.35	370.05	370.45	370.4	371.1	370.25	370.3	370.2	371.7	372.9	370.9	370.95
11	371.05	370.2	370.4	370.4	371.1	370.2	370.3	370.25	371.65	372.9	371.4	370.95
12	371.0	370.2	370.45	370.45	371.0	370.2	370.3	370.3	371.55	372.85	371.4	370.9
13	371.0	370.2	370.5	370.4	370.9	370.25	370.3	370.3	371.6	372.85	371.4	371.0
14	371.0	370.2	370.5	370.5	370.85	370.3	370.3	370.3	371.7	372.8	371.45	371.1
15	371.05	370.2	370.5	370.6	370.8	370.35	370.3	370.35	371.7	372.8	371.5	371.0
16	371.05	370 25	370.45	370.6	370.7	370.3	370.3	370.4	371.8	372.8	371.6	370.95
17	371.0	370.2	370.4	370.65	370.7	370.35	370.3	370.4	371.85	372.75	371.5	370.95
18	371.05	370.2	370.35	370.8	370.6	370.3	370.3	370.45	371.95	372.7	371.5	370.9
19	371.0	370.2	370.35	370.8	370.6	370.3	370.35	370.5	372.1	372.7	371.4	370.85
20	370.9	370.2	370.35	370.8	370.4	370.3	370.35	370.6	372.2	372.6	371.3	370.85
21	370.9	370.25	370.3	371.0	370.6	370.3	370.35	370.95	372.4	373.0	371.4	370.8
22	370.85	370.25	370.25	371.1	370.8	370.35	370.4	370.9	372.65	372.45	371.3	370.7
23	370.8	370.3	370.25	371.1	370.7	370.3	370.4	371.0	372.85	372.45	371.3	370.5
24	370.8	370.3	370.2	371.15	370.6	370.3	370.4	371.05	373.1	372.4	371.3	370.6
25	370.7	370.35	370.15	370.85	370.55	370.35	370.35	371.1	373.2	372.4	371.25	370.6
26	370.65	370.4	370.15	371.2	370.5	370.35	370.35	371.2	373.25	372.3	371.35	370.6
27	370.6	370.55	370.1	371.1	370.5	370.3	370.35	371.35	373.35	372.25	371.45	370.6
28	370.5	370.5	369.8	371.2	370.5	370.3	370.3	371.45	373.2	372.25	371.4	370.65
29	370.5	370.5	370.0	371.3	370.6	370.3	370.3	......	373.1	372.1	371.4	370.6
30	370.45	370.55	369.8	370.5	370.4	370.3	370.3	......	373.0	372.0	371.4	370.5
31	370.45	370.55	......	371.3	......	370.3	370.3	......	373.0	......	371.35	......

ONEIDA RIVER AT CAUGHDENOY

Location.— At the Caughdenoy dam on the Oneida river about 600 feet above the highway bridge at Caughdenoy and about 4 miles below Oneida lake.

Drainage area.— 1,377 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— Water-surface elevations, April 22, 1904, to June 30, 1918. Discharge, January 1, 1910, to June 30, 1918. Dam completed during summer of 1909.

Gages.— Upper gage: On July 20, 1916, the staff on tree on right bank about 50 feet above dam was superseded by a standard Type A gage, No. 184, and by a slope gage on the bank. The standard gage is secured to the same tree and has a range of 8 feet, between elevations 366.0 and 374.0. The slope gage on the bank a short distance upstream has a range of 5 feet, between elevations 372.0 and 377.0. The gage bench-mark is a nail in last tree in row on north side of highway opposite northeast monument and is at elevation of 389.424 (B. C. datum).

Lower gage: On July 19, 1916, the staff gage on pile below old lock was superseded by a standard Type A gage. This gage, No. 183, is secured to the west end of concrete retaining wall below lower south approach wall to Caughdenoy lock, and has a range of 12 feet, between elevations 362.0 and 374.0. A standard bench-mark plug is set in the face of the wall near the gage at elevation 368.0 (B. C. datum).

These gages are read once daily, the upper one to half-tenths, the lower one to tenths.

Discharge computations.— Flow over dam computed, using coefficient derived from U. S. Geological Survey experiments, submergence from U. S. Deep Waterways experiments. Flow through gate and diversion through lock culverts estimated by theoretical calculations.

Control.— Concrete dam with straight ogee type crest 415 feet long at elevation 369.63 and a vertical lift-gate with clear span of 30 feet 9 inches and sill at elevation 362.73.

Extremes of discharge.*— Current year: Maximum stage recorded, elevation 371.8 on April 27; discharge, 7,030 second-feet on March 28. Minimum stage recorded, elevation 369.85 on September 30; discharge, 275 second-feet on August 17.

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* Due to the operation of the gate in the old lock, the maximum and minimum discharges do not necessarily occur on the days of maximum and minimum water-surface elevations.

1910–1918: Maximum discharge recorded, March 30, 1913, 11,100 second-feet. Minimum discharge recorded, January 9, and March 13 and 14, 1914, zero second-feet, water below crest of dam and no reported diversion.

Diversion.— From the southern portion of this drainage basin, principally on Chittenango, Butternut, Oneida and Limestone creeks, there is storage and diversion for the water-supply of the old Erie canal. From the Black and Mohawk river basins there is diversion into this drainage area via the summit levels of the old Erie and new Barge canal.

Regulation.— By storage indicated under diversion and by Oneida lake surface of 78 square miles.

Accuracy.— Estimated flow within ten per cent. There are occasional short periods, which can not now be definitely determined, for which the estimated discharge previously published is too large, due to the use of a water-surface elevation incorrectly reported one foot too high.

Daily elevation of water-surface (B. C. datum) of ONEIDA RIVER ABOVE DAM AT CAUGHDENOY, for the year ended June 30, 1918. Mrs. J. R. Hiller, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	370.8	370.2	370.45	369.9	370.8	370.15	370.3	370.25	370.95	*a*	371.15	370.8
2	370.75	370.15	370.4	370.0	370.9	370.2	370.3	370.25	370.95	*a*	371.05	370.75
3	370.75	370.05	370.4	370.1	370.8	370.2	370.25	370.25	370.95	*a*	371.05	370.75
4	370.75	370.0	370.45	370.0	370.9	370.1	370.2	370.25	371.0	*a*	371.05	370.8
5	370.75	370.0	370.5	370.05	370.9	370.2	370.25	370.25	371.0	371.6	371.1	370.75
6	370.7	370.0	370.3	370.05	370.9	370.15	370.2	370.2	370.9	371.6	371.05	370.7
7	370.65	370.0	370.45	370.25	370.8	370.1	370.25	370.3	370.95	371.6	371.0	370.5
8	370.65	369.95	370.5	370.15	370.8	370.15	370.25	370.2	371.0	371.5	370.8	370.65
9	370.6	370.05	370.35	370.3	370.7	369.9	370.25	370.2	370.95	371.5	370.8	370.6
10	370.6	370.0	370.35	370.35	370.65	370.2	370.25	370.25	370.9	371.55	370.9	370.6
11	370.65	370.15	370.4	370.4	370.7	370.15	370.2	370.25	371.0	371.6	370.9	370.6
12	370.6	370.2	370.3	370.6	370.6	370.2	370.3	370.25	370.95	371.55	371.0	370.6
13	370.6	370.15	370.35	370.15	370.6	370.2	370.3	370.25	370.9	371.5	370.95	370.5
14	370.65	370.2	370.35	370.45	370.55	370.3	370.25	370.25	371.0	371.5	371.0	370.5
15	370.6	370.15	370.4	370.45	370.5	370.3	370.25	370.2	370.95	371.7	371.0	370.6
16	370.55	370.2	370.3	370.3	370.45	370.3	370.3	370.35	371.1	371.7	371.0	370.7
17	370.6	369.95	370.3	370.5	370.45	370.3	370.3	370.4	371.0	371.65	370.95	370.6
18	370.55	370.0	370.2	370.55	370.45	370.3	370.3	370.4	371.15	371.6	370.95	370.55
19	370.5	370.1	370.2	370.65	370.4	370.3	370.3	370.5	371.2	371.6	370.95	370.5
20	370.55	370.1	370.1	370.55	370.4	370.3	370.3	370.5	371.3	371.6	370.9	370.5
21	370.5	370.2	370.0	370.75	370.4	370.25	370.3	370.6	371.35	371.8	370.9	370.5
22	370.5	370.25	370.1	370.6	370.5	370.3	370.3	370.6	371.5	371.5	370.9	370.2
23	370.5	370.2	370.1	370.6	370.2	370.3	370.35	370.6	371.6	371.55	370.8	370.25
24	370.45	370.3	370.05	370.6	370.35	370.3	370.3	370.65	371.7	371.5	370.85	370.4
25	370.4	370.2	370.0	370.6	370.3	370.15	370.3	370.65	371.7	371.45	370.85	370.4
26	370.35	370.2	370.0	370.75	370.3	370.3	370.3	370.6	371.75	371.5	371.0	370.35
27	370.25	370.35	370.1	370.7	370.3	370.3	370.3	370.85	371.75	371.4	370.9	370.3
28	370.2	370.45	370.0	370.45	370.3	370.4	370.3	370.85	371.75	371.35	370.95	370.35
29	370.2	370.45	369.9	370.8	370.35	370.4	370.25	......	371.7	371.35	370.95	370.25
30	370.2	370.45	369.85	370.7	370.3	370.4	370.2	......	371.7	371.3	370.9	370.2
31	370.2	370.45	......	370.8	......	370.3	370.2	......	371.7	......	370.85	......

a No record.

Daily elevation of water-surface (B. C. datum) of ONEIDA RIVER BELOW DAM AT CAUGHDENOY, for the year ended June 30, 1918. Mrs. J. R. Hiller, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	365.5	364.0	364.2	363.9	365.5	364.3	364.0	364.0	366.5	367.4	365.8	365.0
2.....	365.5	364.0	364.2	363.7	365.6	364.3	363.8	364.0	366.4	367.4	365.9	365.0
3.....	365.4	364.0	364.2	363.6	365.6	364.4	363.7	364.0	366.4	367.4	365.9	364.7
4.....	365.3	364.0	364.2	363.6	365.6	364.3	363.7	364.2	366.3	367.5	365.6	364.8
5.....	365.2	364.0	364.2	363.65	365.5	364.3	363.6	364.2	366.0	367.5	365.6	364.6
6.....	365.1	364.0	364.0	363.6	365.5	364.3	363.7	364.2	366.0	367.5	365.4	364.8
7.....	365.1	363.9	364.1	363.8	365.2	364.3	363.8	364.3	366.2	367.4	365.3	364.4
8.....	365.0	363.9	364.2	363.8	365.1	364.3	363.8	364.1	366.2	367.8	365.0	364.7
9.....	364.9	363.8	364.0	363.95	365.0	364.7	363.7	364.1	366.1	367.3	365.1	364.8
10.....	364.9	363.7	364.0	363.9	365.0	364.5	363.7	364.1	366.0	367.4	365.2	364.8
11.....	364.9	363.6	364.1	364.0	365.0	364.0	363.6	364.3	366.5	367.5	365.0	364.8
12.....	365.0	363.7	364.0	364.4	364.9	364.1	363.7	364.4	366.2	367.4	365.3	364.4
13.....	365.0	363.8	364.0	363.9	364.8	364.1	363.8	364.3	366.1	367.4	365.3	364.4
14.....	365.0	363.8	364.0	364.0	364.8	364.8	364.0	364.2	366.5	367.4	365.4	364.9
15.....	364.9	363.7	364.1	364.25	364.8	364.3	364.0	364.3	366.7	366.8	365.5	364.7
16.....	364.9	363.7	364.1	364.1	364.7	364.3	364.0	364.7	367.1	366.7	365.4	364.8
17.....	364.8	363.8	364.1	364.2	364.6	364.3	364.0	365.0	367.2	366.8	365.4	364.6
18.....	364.8	363.8	364.1	364.2	364.6	364.3	364.0	365.0	367.2	366.8	365.2	364.5
19.....	364.7	363.9	364.2	364.4	364.5	364.3	364.3	365.3	367.3	366.9	365.1	364.3
20.....	364.7	364.0	364.2	364.4	364.5	364.3	364.3	365.8	367.5	367.0	365.1	364.4
21.....	364.7	363.9	364.0	364.6	364.4	364.3	364.4	366.0	367.7	367.4	365.1	364.6
22.....	364.6	363.9	364.0	364.8	364.5	364.2	364.4	366.1	367.8	366.8	365.2	364.2
23.....	364.6	364.0	363.9	364.85	364.4	364.4	364.1	366.1	368.0	366.7	365.0	364.2
24.....	364.5	364.0	363.9	364.9	364.4	364.4	364.0	366.0	368.2	366.2	365.1	364.1
25.....	364.5	364.0	363.9	364.9	364.4	364.4	364.0	366.0	368.3	366.3	365.0	364.2
26.....	364.4	364.1	363.9	365.2	364.4	364.4	364.0	365.8	368.3	366.3	365.0	364.2
27.....	364.3	364.3	363.9	365.2	364.4	364.3	364.0	366.5	368.3	366.2	365.1	364.1
28.....	364.2	364.3	363.85	364.8	364.3	364.4	364.2	366.5	368.1	366.2	365.2	364.1
29.....	364.2	364.3	363.9	365.2	364.4	364.2	364.2	......	368.0	366.2	365.2	364.1
30.....	364.1	364.2	363.9	364.9	364.3	364.1	364.0	......	367.8	366.0	365.1	364.35
31.....	364.1	364.2	......	365.2	......	364.0	364.0	......	367.7	......	365.0	......

Daily discharge, in second-feet, of ONEIDA RIVER AT CAUGHDENOY, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	3,760	2,380	1,070	1,450	3,800	2,320	1,200	1,100	4,480	......	3,990	2,770
2.....	3,620	2,290	992	1,580	4,070	2,830	1,200	1,100	4,490	......	3,730	2,660
3.....	3,620	2,130	976	1,740	3,800	2,830	1,120	1,090	4,490	......	3,720	2,550
4.....	3,650	2,030	1,060	1,650	4,080	2,470	1,040	1,090	4,660	......	3,640	2,710
5.....	3,640	2,010	1,140	1,660	4,090	2,840	1,120	1,090	4,690	6,130	3,790	2,520
6.....	3,490	2,080	777	1,660	4,090	2,740	1,040	1,010	4,390	6,130	3,580	2,450
7.....	3,360	2,040	1,060	1,980	3,820	2,680	1,120	1,180	4,530	6,140	3,410	1,860
8.....	3,370	1,960	1,160	1,800	3,880	2,770	1,120	1,010	4,700	5,890	2,780	2,320
9.....	3,250	2,100	882	2,060	3,540	614	1,120	1,010	4,530	5,800	2,910	2,340
10.....	3,240	335	870	898	3,420	1,012	1,120	1,090	4,390	5,960	3,100	2,230
11.....	3,360	547	964	994	3,560	932	1,040	1,090	4,630	6,130	3,040	2,230
12.....	3,230	630	779	1,400	3,290	1,010	1,200	1,090	4,530	5,960	3,410	2,160
13.....	3,230	547	870	571	3,300	1,010	1,200	1,090	4,380	5,800	3,270	1,860
14.....	3,370	620	874	1,090	3,180	1,180	1,120	1,090	4,650	5,800	3,460	2,040
15.....	3,250	549	962	1,090	3,050	1,180	1,120	1,010	4,450	4,450	3,490	2,200
16.....	3,120	620	793	811	2,940	1,180	1,200	1,270	4,850	5,990	3,450	2,470
17.....	3,240	275	785	1,180	2,950	1,180	1,200	1,850	4,530	5,880	3,310	2,160
18.....	3,120	337	1,850	1,290	2,960	1,180	1,190	1,360	4,990	5,660	3,250	2,230
19.....	2,990	481	1,850	1,510	2,840	1,180	1,190	2,560	5,140	5,740	3,220	1,830
20.....	3,140	465	1,680	1,290	2,840	1,180	1,190	2,550	5,470	5,760	3,070	1,660

Daily discharge, in second-feet, of ONEIDA RIVER AT CAUGHDENOY, for the year ended June 30, 1918— *Continued*

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
21.....	3,000	620	1,540	1,750	2,840	1,090	1,190	3,580	5,630	6,530	3,070	1,930
22.....	3,010	702	1,690	3,270	3,060	1,180	1,190	3,520	6,130	5,380	3,100	1,230
23.....	3,000	622	1,710	3,280	2,510	1,170	1,280	3,530	6,260	5,520	2,790	1,310
24.....	2,910	788	1,620	3,270	2,730	1,170	1,190	3,680	6,810	5,230	2,910	1,550
25.....	2,790	614	1,560	3,250	2,610	927	1,190	3,680	6,820	5,100	2,920	1,590
26.....	2,690	634	1,550	3,660	2,670	1,180	1,190	3,570	6,980	5,260	3,330	1,500
27.....	2,460	882	1,690	3,520	2,670	1,180	1,190	4,190	6,990	4,900	3,080	1,360
28.....	2,360	1,058	1,550	2,910	2,670	1,370	1,190	4,200	7,030	4,740	3,250	1,460
29.....	2,380	1,058	1,430	3,810	2,730	1,370	1,100	......	6,670	4,740	3,240	1,290
30.....	2,370	1,062	1,380	3,520	2,610	1,370	1,020	......	6,450	4,530	3,080	1,300
31.....	2,370	1,066	......	3,810	......	1,290	1,020	......	6,480	......	2,920	.....
Mean...	3,109	1,081	1,237	2,057	3,218	1.535	1,148	1,971	5,330	5,680	3,268	1,993

NOTE.— April 1 to 4, gage out; mean discharge estimated as 6,350 second-feet.

Monthly discharge of ONEIDA RIVER AT CAUGHDENOY, for the year ended June 30, 1918

[Drainage area, 1,377 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July.....	3,760	2,370	3,109	2.26	2.61
August.....	2,380	275	1,081	0.785	0.99
September.....	1,850	777	1,237	0.898	1.00
October.....	3,810	571	2,057	1.49	1.73
November.....	4,090	2,510	3,218	2.34	2.61
December.....	2,840	614	1,535	1.11	1.29
January.....	1,280	1,020	1,148	0.834	0.96
February.....	4,200	1,010	1,971	1.43	1.49
March.....	7,030	4,380	5,330	3.87	4.46
April.....	6,530	4,450	5,680	4.12	4.60
May.....	3,990	2,780	3,268	2.37	2.73
June.....	2,770	1,230	1,993	1.45	1.62
The year.....	7,030	275	2,637	1.92	26.00

ONEIDA RIVER AT OAK ORCHARD

This station is located on the Oak Orchard highway bridge, also known as Schroeppel's bridge, across the Oneida river at Oak Orchard, about 7⅝ miles upstream from the junction of the Oneida and Seneca rivers. It was established April 23, 1904, just below the old lock at the Oak Orchard dam and then indicated the water-surface below the dam. On August 1, 1915, the gage was moved to the lower end of the south side of the old pier near the south, or left bank. The bridge is about ⅓ mile below the site of the old dam, which has been removed in connection with the canalization of the Oneida river for the Barge canal. Previous to 1914 this record was published as "below dam."

On July 18, 1916, the staff gage was replaced by a standard Type A gage, No. 182, in the same location, having a range of 12 feet, between elevations 361.0 and 373.0. The gage benchmark is on the northeast corner of south abutment of Schroeppel's bridge and is at elevation 370.489 (B. C. datum).

The gage is read once daily to quarter-tenths.

Daily elevation of water-surface (B. C. datum) of ONEIDA RIVER AT OAK ORCHARD, for the year ended June 30, 1918. LaRue Sitterly, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	364.83	363.98	364.00	363.90	364.55	364.25	363.70	364.05	365.58	365.45	364.70	364.10
2	364.80	363.95	364.05	363.75	364.62	364.28	363.60	364.08	365.45	365.40	364.65	364.30
3	364.70	363.95	364.15	363.65	364.55	364.28	363.55	364.10	365.40	365.38	364.60	364.35
4	364.65	363.98	363.08	363.65	364.50	364.18	363.48	364.15	365.38	365.38	364.58	364.32
5	364.58	364.05	363.95	363.62	364.45	364.10	363.45	364.15	365.32	365.35	364.60	364.28
6	364.52	364.10	363.95	363.62	364.35	364.10	363.45	364.12	365.30	365.22	364.48	364.25
7	364.42	363.95	363.80	363.70	364.25	364.10	363.42	364.10	365.28	365.25	364.35	363.15
8	364.32	363.85	363.80	363.88	364.22	364.05	363.42	364.08	365.25	365.18	364.30	364.15
9	364.30	363.80	363.88	363.85	364.22	364.05	363.42	364.05	365.22	365.20	364.28	364.25
10	364.45	363.75	363.95	363.82	364.25	364.05	363.42	364.08	365.25	365.25	364.22	364.40
11	364.48	363.62	363.92	363.82	364.32	364.10	363.42	364.10	365.90	365.28	364.28	364.30
12	364.48	363.65	363.90	363.80	364.32	364.10	363.42	364.15	365.20	365.35	364.32	364.22
13	364.48	363.78	363.88	363.82	364.30	364.15	363.45	364.20	365.30	365.35	364.48	364.15
14	364.48	363.72	363.90	363.90	364.30	364.15	363.48	364.10	365.48	365.28	364.40	364.10
15	364.45	363.70	363.95	363.92	364.28	364.15	363.50	364.08	365.85	365.20	364.38	364.00
16	364.40	363.70	363.98	364.00	364.25	364.18	363.50	364.10	366.22	365.15	364.45	364.05
17	364.35	363.72	364.05	363.95	364.28	364.18	363.68	364.15	366.22	365.08	364.32	364.05
18	364.22	363.75	364.10	363.92	364.32	364.18	363.82	364.28	366.30	365.00	364.20	363.85
19	364.28	363.90	364.15	363.98	364.25	364.20	363.90	364.70	366.35	365.05	364.10	363.85
20	364.30	364.10	364.15	364.05	364.18	364.22	363.92	364.90	366.40	365.10	364.10	363.90
21	364.28	363.95	364.12	364.12	364.18	364.25	363.95	364.45	366.42	365.40	364.20	364.18
22	364.25	363.90	363.98	364.18	364.18	364.25	363.92	365.60	366.48	365.30	364.28	364.25
23	364.22	363.90	363.88	364.25	364.20	364.28	364.00	365.55	366.52	365.15	364.28	364 15
24	364.20	363.92	363.85	364.28	364.20	364.32	364.02	365.50	366.58	364.80	364.30	363.90
25	364.15	363.95	363.88	364.38	364.20	364.38	363.92	365.50	366.65	364.70	364.30	363.95
26	364.10	364.15	363.92	364.45	364.20	364.22	363.82	365.52	366.60	364.72	364.40	363.88
27	364.00	364.20	363.95	364.48	364.20	364.15	363.80	365.55	366.40	364.70	364.35	363.82
28	364.00	364.25	363.98	364.50	364.22	363.95	363.90	365.60	366.28	364.82	364.30	363.82
29	364.00	364.15	363.98	364.55	364.22	363.92	364.00	......	366.10	364.82	364.22	363 82
30	364.00	364.10	363.98	364.52	364.25	363.90	364.00	......	365.95	364.72	364.18	363 95
31	364.00	364.10	......	364.50	......	363.80	364.02	......	365.85	......	364.15	......

ONEIDA RIVER AT THREE RIVER POINT

This station, located at Three River Point, the junction of Seneca and Oneida rivers, which form the Oswego river, was established April 16, 1904. On July 17, 1916, the staff gage on the upstream end of the most northerly pier of the temporary tow-path bridge over Oneida river was superseded by a standard

Type A gage, No. 181, in two sections. The lower section is secured to the south face of east end of boat landing of Three River dock, and has a range of 4 feet, between elevations 360.0 and 364.0. The upper section is secured to the west wing wall of south abutment of the highway bridge over Oneida river, and has a range of 8 feet, between elevations 364.0 and 372.0. A standard bench-mark plug is set in the face of the wall near the upper section at elevation 368.0 (B. C. datum).

The gage is read once daily to tenths.

Daily elevation of water-surface (B. C. datum) of ONEIDA RIVER AT THREE RIVER POINT, for the year ended June 30, 1918. Fred Chamberlain, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	364.7	363.9	364.0	364.0	364.35	364.0	363.6	363.7	364.9	364.75	364.45	364.0
2.....	364.6	363.9	364.0	363.7	364.35	364.2	363.5	363.6	364.8	364.6	364.25	364.3
3.....	364.4	363.8	364.1	363.6	364.35	364.15	363.45	363.85	364.65	364.3	364.1	364.2
4.....	364.55	363.85	363.95	363.6	364.2	363.95	363.4	364.0	364.7	364.5	364.2	364.1
5.....	364.2	364.0	363.9	363.6	364.15	364.1	363.4	364.05	364.6	364.5	364.15	363.95
6.....	364.3	364.1	363.95	363.55	364.15	364.1	363.4	364.0	364.6	364.4	364.15	363.95
7.....	364.2	363.85	363.9	363.65	364.0	363.95	363.6	364.0	364.8	364.5	364.05	364.0
8.....	364.25	363.8	363.95	363.9	364.0	363.85	363.4	363.9	364.8	364.45	364.1	363.95
9.....	364.1	363.75	363.95	363.85	364.05	363.9	363.3	363.85	364.8	364.3	364.0	364.15
10.....	364.2	363.6	363.9	363.8	364.0	363.8	363.3	364.0	364.85	364.6	363.9	364.25
11.....	364.3	363.6	363.95	363.8	364.0	363.65	363.3	364.1	365.2	364.55	363.9	364.0
12.....	364.3	363.65	363.95	363.9	364.1	363.9	363.35	364.2	364.7	364.5	364.05	363.9
13.....	364.2	363.8	363.9	363.85	364.1	363.95	363.6	364.1	364.9	364.65	364.2	363.9
14.....	364.2	363.7	363.9	363.85	364.05	364.0	363.75	363.95	365.2	364.8	364.25	363.95
15.....	364.25	363.7	363.95	364.0	363.9	364.05	363.8	364.0	365.5	364.65	364.1	363.9
16.....	364.25	363.7	364.0	363.9	364.05	364.1	363.75	364.45	365.85	364.45	364.15	363.95
17.....	364.15	363.75	364.05	363.9	364.0	364.15	363.7	364.75	365.8	364.3	364.05	363.85
18.....	364.05	363.8	363.9	363.9	364.1	364.1	363.8	364.7	365.8	364.35	364.05	363.85
19.....	364.0	363.9	364.0	363.85	364.1	364.1	363.95	364.6	365.7	364.6	363.95	363.55
20.....	364.05	364.05	363.95	363.9	364.0	364.1	364.1	364.65	365.85	364.8	363.9	363.75
21.....	364.05	363.85	363.9	364.05	363.9	364.1	364.1	365.0	365.9	364.95	364.1	364.1
22.....	364.05	363.85	363.8	364.05	364.0	364.0	364.15	365.5	365.85	364.9	364.1	364.0
23.....	363.9	363.95	363.7	364.05	364.15	364.2	364.05	365.0	365.9	364.65	364.1	363.95
24.....	363.95	364.0	363.75	364.0	363.95	364.3	363.9	364.8	365.9	364.35	364.1	363.85
25.....	364.0	364.0	363.75	364.15	364.0	364.3	363.8	364.5	365.9	364.25	364.0	363.8
26.....	364.0	363.95	363.8	364.2	364.15	364.25	363.7	364.5	365.6	364.35	364.2	363.75
27.....	363.85	364.25	363.9	364.2	364.1	364.1	363.7	365.0	365.55	364.3	364.1	363.6
28.....	363.9	364.0	363.9	364.25	364.0	363.95	364.0	365.0	365.4	364.5	364.05	363.7
29.....	363.95	364.05	363.9	364.3	363.9	363.65	364.0	......	365.2	364.55	364.1	363.75
30.....	363.9	364.0	363.9	364.1	363.9	363.8	363.7	......	365.1	364.4	364.0	363.9
31.....	363.85	363.95	......	364.2	......	363.75	363.75	......	364.9	......	363.9	......

ONEIDA LAKE

Oneida lake, with a water-surface of 78 square miles, is about 20¾ miles long and 4 to 5 miles wide the greater part of its length. Its depth varies from 20 to 50 feet, but there are several shoals. The total drainage area above its outlet is 1,353 square miles, of which the lake surface constitutes five and three-quarters per cent. The drainage basin within a radius of 10 miles to the south and west is relatively flat, with numerous swampy tracts. The lake receives, through Chittenango and Oneida creeks, drainage from an extensive area of the central New York plateau and, through Wood and Fish creeks on the east, drainage from a portion of the west slope of the plateau bordering the Adirondack mountains. On the north the drainage area is less extensive and the inflowing streams are small.

The Barge canal traverses the length of the lake. A low navigable surface is maintained at elevation 369.9 by the Caughdenoy dam 4 miles down the Oneida river, a description of which is given under the Oneida river.

For elevation of west end of Oneida lake see Oneida river at Brewerton.

The following table gives the elevations of extreme high and low-water surface each year of Oneida lake as indicated by gages at Brewerton at the west and Sylvan Beach at the east end of the lake. The gage at Brewerton is about 1,500 feet down the outlet, while that at Sylvan Beach is about 800 feet up Fish creek from the lake. The difference between extreme surface at each end of the lake is probably mainly due to wind, supplemented by such slight slope between the gage and lake as may occur during times of large flow.

Annual high and low water-surface elevation of ONEIDA LAKE

YEAR	BREWERTON			SYLVAN BEACH		
	SURFACE ELEVATION		Range	SURFACE ELEVATION		Range
	High	Low	Feet	High	Low	Feet
1904	374.0	369.1	4.9	....	....	....
1905	374.9	369.9	5.0	375.4	370.5	4.9
1906	372.8	368.7	4.1	373.1	368.9	4.2
1907	372.9	369.1	3.8	373.1	369.2	3.9
1908	373.4	368.6	4.8	373.7	368.5	5.2
1909	374.5	370.0	4.5	374.5	369.8	4.7
1910	373.9	369.1	4.8	374.0	370.0	4.0
1911	374.2	370.2	4.0	374.3	369.7	4.6
1912	375.3	370.2	5.1	376.9	370.0	6.9
1913	375.3	369.6	5.7	377.0	369.3	7.7
1914	374.2	369.7	4.5	375.8	369.8	6.0
1915	372.5	369.5	3.0	372.4	369.5	2.9
1916	374.0	369.3	4.7	374.0	369.9	4.1
1917	374.5	369.0	5.5	374.2	369.1	5.1

ONEIDA LAKE AT SYLVAN BEACH

This station, established July 1, 1904, is located at the east end of Oneida lake, at Sylvan Beach. A staff gage, attached to the corner of the crib dock on the right, or north bank of canalized Fish creek, just above, or east of Railroad street bridge and about 800 feet from the lake, was in use until May 31, 1917. On May 31, 1917, a standard Type A gage, No. 186, in two sections, was erected in practically the same location. The lower section has a range of 8 feet, between elevations 367.0 and 375.0. The upper section is secured to the north face of the north abutment of the Sylvan Beach bridge and has a range of 4 feet, between elevations 373.0 and 377.0. The gage benchmark is a wooden plug in top of north abutment, Sylvan Beach bridge, between piers, and is at elevation of 377.0 (B. C. datum).

The gage is read twice daily — at 9:00 A. M. and 2:00 P. M.— to tenths.

Daily elevation of water-surface (B. C. datum) of ONEIDA LAKE AT SYLVAN BEACH, for the year ended June 30, 1918. Wm. H. Dunn, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	371.3	370.4	370.5	369.9	371.6	370.4
2	371.4	370.3	370.6	370.0	371.8	370.4
3	371.3	370.3	370.7	370.0	371.8	370.3
4	371.2	370.3	370.7	370.1	371.5	370.3
5	371.1	370.2	370.6	370.2	371.5	370.2
6	371.1	370.1	370.6	370.3	371.4	370.2
7	371.2	370.0	370.6	370.3	371.4	370.2
8	371.0	369.9	370.7	370.3	371.4	370.2
9	371.0	370.0	370.6	370.4	371.4	370.2
10	371.0	370.3	370.6	370.5	371.3	370.2
11	371.0	370.2	370.6	370.5	371.2	370.2
12	371.0	370.2	370.5	370.4	371.1	370.2
13	371.0	370.2	370.5	370.4	371.2	370.4
14	371.0	370.2	370.5	370.7	370.9	370.4
15	371.0	370.3	370.5	370.8	370.9	370.4
16	371.0	370.4	370.4	370.9	370.8	370.5
17	370.9	370.5	370.4	370.8	370.8	370.5
18	370.9	370.4	370.4	370.8	370.7	370.6
19	370.8	370.3	370.3	370.6	370.6	370.6
20	370.8	370.3	370.3	370.5	370.6	370.4
21	370.8	370.3	370.2	370.5	370.7	370.4
22	370.8	370.2	370.2	370.4	370.7	370.4
23	370.8	370.1	370.1	370.3	370.8	370.3
24	370.7	370.4	370.1	370.3	370.6	370.3
25	370.7	370.5	370.0	370.5	370.6	370.2
26	370.7	370.6	370.0	370.8	370.5	370.2
27	370.6	370.5	370.0	370.9	370.5	370.2
28	370.6	370.5	370.0	371.0	370.6	370.2
29	370.6	370.5	369.9	371.2	370.5	370.1
30	370.5	370.4	369.9	371.4	370.4	370.1
31	370.4	370.4	......	371.5	......	370.1

NOTE.— Record, January 1, 1918, to June 30, 1918, considered not reliable.

CHITTENANGO CREEK

DESCRIPTION

Chittenango creek is the principal tributary of Oneida lake from the south. It comprises three main branches, namely, Butternut creek, Limestone creek and Chittenango creek proper. The three branches join near North Manlius. Above the junction with Butternut creek, Chittenango creek flows through an irregular dumb-bell-shaped area extending in a northwest and southeast direction. This area lies chiefly in the dissected, hilly region south of the line of the New York Central railroad. The length of the basin is about 22 miles. Its width in the upper portion is 9 miles; in the middle portion, 4 miles; in the lower portion, 7 miles. The drainage basin is deeply rolling, mostly cleared, and has a heavy, impervious soil with extensive sodded-meadow areas. The soil is underlaid by shale rock, often outcropping, and affording numerous springs. The stream tributaries are somewhat sparse. Marsh and swamp areas are very limited, with the exception of the Nelson swamp, about two square miles in area.

The outflow from Cazenovia lake is regulated and there is also a reservoir at Erieville. These reservoirs are used to supply the summit level of the Erie canal. The capacities of these reservoirs are given as follows in New York State Barge Canal Report for 1901, page 663:

Erieville Reservoir

Storage capacity	318,424,000 cubic feet
Water-surface	340 acres

Cazenovia Lake

Storage capacity	206,997,000 cubic feet
Water-surface	1.7 square miles

The head of the stream is near Erieville reservoir, which is formed by a dam crossing a small stream valley, formerly tributary to Chenango river through Eaton brook. Cazenovia lake is located 10 miles below Erieville reservoir, which is at the head of the stream at elevation 1,190. From its outlet to the foot of the plateau at Erie canal crossing, the stream descends 770 feet, the distance, following the general trend of the valley, being 11 miles. At Chittenango falls there occurs a precipitous descent of about 100 feet.

CHITTENANGO CREEK AT CHITTENANGO

This station, established May 22, 1901, is located at the Main street bridge over Chittenango creek at Chittenango. This was originally a discharge station, but since 1911 it has been maintained for water-surface elevation only. A staff gage, secured to the downstream end of the left abutment of the bridge, was used until September 28, 1916, when it was replaced by a standard Type A gage, No. 191, having a range of 8 feet, between elevations 449.0 and 457.0. The gage bench-mark is the top of the concrete coping at angle with wing, east abutment, upstream side of Main street bridge, and is at elevation 458.905 (B. C. datum).

The gage is read twice daily — morning and afternoon — to hundredths.

Daily elevation of water-surface (B. C. datum) of CHITTENANGO CREEK AT CHITTENANGO, for the year ended June 30, 1918. W. S. Siver, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	452.80	452.00	451.42	451.92	452.45	452.35	452.28	452.46	452.71	452.58	452.35	451.95
2	452.78	451.98	451.89	451.98	452.30	452.08	452.30	452.32	452.48	452.61	452.25	451.98
3	452.52	452.00	451.88	451.84	452.29	451.95	452.10	452.35	452.40	452.50	452.18	451.82
4	452.52	451.99	451.75	451.80	452.22	451.82	452.30	452.22	452.40	452.30	452.08	451.82
5	452.38	451.95	451.70	451.90	452.20	451.78	452.52	452.10	452.30	452.22	452.02	451.82
6	452.20	451.98	451.78	451.96	452.10	451.78	452.48	452.25	452.80	452.19	452.08	451.82
7	452.05	451.90	451.78	451.88	452.10	451.92	452.55	452.26	452.62	452.14	452.08	452.05
8	452.00	451.86	451.85	451.86	452.09	451.85	452.55	452.26	452.50	452.15	452.02	451.98
9	452.08	452.25	451.81	452.02	452.12	451.72	452.55	452.65	452.36	452.78	452.08	451.85
10	452.04	452.00	451.85	451.88	452.08	452.05	452.65	452.78	452.92	452.35	452.08	452.00
11	452.10	451.88	451.72	451.91	452.02	452.30	452.50	452.60	452.52	452.30	452.02	451.92
12	452.15	451.88	451.82	451.89	452.05	452.18	452.68	452.60	452.46	452.28	452.00	452.55
13	452.00	451.86	451.75	452.25	452.02	452.02	452.70	452.76	453.15	452.32	452.05	452.38
14	452.05	451.90	451.72	451.92	451.98	452.12	452.68	452.31	453.82	452.65	452.15	452.02
15	452.20	451.91	451.76	451.90	452.00	452.30	452.70	452.78	453.55	452.80	451.95	451.85
16	452.12	451.86	451.82	452.22	452.02	452.18	452.72	452.60	453.08	452.52	451.98	451.88
17	452.05	451.86	451.80	451.94	452.02	452.30	452.62	452.20	453.10	452.42	451.90	451.85
18	452.22	451.84	451.72	451.90	451.98	452.30	452.56	452.48	453.28	453.00	451.88	451.82
19	452.02	451.80	451.82	451.94	452.05	452.38	452.82	452.70	453.32	452.48	451.82	451.80
20	452.08	451.80	451.78	453.05	452.01	452.22	452.68	453.50	453.45	452.30	451.82	451.68
21	452.18	451.73	451.81	452.30	452.02	452.00	452.70	452.75	453.66	452.34	451.80	451.78
22	452.00	451.75	451.79	452.08	452.20	451.92	452.78	452.38	453.58	452.48	451.90	452.00
23	451.90	451.85	451.74	452.08	452.26	452.12	452.68	452.28	453.20	452.55	451.92	452.10
24	451.90	452.43	451.79	452.52	452.12	451.92	452.69	452.42	452.81	452.42	451.88	451.92
25	451.90	452.00	451.79	452.98	452.02	451.88	452.58	452.58	452.80	452.32	451.92	451.88
26	451.98	451.87	451.75	452.45	452.01	451.88	452.58	453.70	452.68	452.28	452.40	451.78
27	451.95	451.85	451.74	452.22	452.12	452.20	452.50	453.10	452.52	452.22	452.35	451.72
28	451.95	451.78	451.68	452.49	452.05	451.88	452.25	452.95	452.42	452.12	452.12	451.70
29	451.98	451.82	451.75	452.60	452.02	451.48	452.22	......	452.42	452.08	451.98	451.74
30	452.02	451.80	451.92	452.98	452.03	452.25	452.52	......	452.50	452.11	452.00	451.95
31	451.96	451.90	......	453.40	......	452.20	452.48	......	452.58	......	451.98	......

BUTTERNUT CREEK

DESCRIPTION

The headwaters of Butternut creek lie at elevation 1,700 feet, near the south line of Onondaga county. This stream drains a narrow basin about 24 miles in length and having an average width of about 3 miles. The stream flows in a northerly direction. Jamesville reservoir is located 14 miles below the source at elevation about 640. North of the Erie canal the stream flows out into the flat lands, at elevation about 400, which border Oneida lake for a width of several miles. Butternut creek is joined by Limestone creek near North Manlius at a point about 1½ miles above its junction with Chittenango creek. The Erie canal crosses the stream 4½ miles below Jamesville. Above the Erie canal crossing the slopes are steep and the tributaries are mostly short laterals. Jamesville reservoir has a capacity of 170,000,000 cubic feet. The water-surface area is 252 acres. At a distance of 2.35 miles below Jamesville there is a dam which diverts part of the stream to the Orrville feeder. This feeder is 2.25 miles in length.

BUTTERNUT CREEK AT JAMESVILLE

Location.— At the first bridge over Butternut creek above the head of the Orrville feeder and about 1½ miles below the village of Jamesville.

Drainage area.— 53 square miles.

Records available.—Gage heights, July 25, 1907, to June 30, 1918. Discharge, July 25, 1907, to September 15, 1915, and July 1, 1916, to June 30, 1918.

Gage.— Standard chain gage secured to left abutment of old bridge, read to tenths twice daily — at 8 A. M. and 4 P. M.

Discharge measurements.— Made from downstream side of bridge, and by wading above and below gage.

Discharge computations.—Due to changes in the control in September, 1915, and October, 1916, it has been necessary to establish new rating curves. A curve that applied from July 1 to October 17, 1916, was established from two current-meter measurements and by comparison with previous and subsequent curves. It was found that this curve could not be applied to the period from September, 1915, to July 1, 1916, probably due to changes in the control.

The curve established from measurements made since October 18, 1916, is fairly well defined for gage heights up to 3.6 feet. Above that, the discharge is approximate only.

Control.— Gravel rift 400 feet below gage; changeable. The control was materially raised by deposit of gravel during flood about September 14, 1915. A channel was opened through this gravel rift in October, 1916, to lower the water during repairs to the bridge.

Extremes of discharge.— Current year: Maximum stage recorded, 5.6 feet, July 10 at 4 P. M.; discharge not available. Minimum stage recorded, 1.9 feet, December 7 at 8 A. M.; discharge, 3.5 second-feet.

1907–1918: Maximum stage recorded, 7.2 feet, January 1, 1917, at 8 A. M. and 4 P. M.; discharge not available. Minimum stage recorded, 0.10 foot, 10 days in June and 10 days in July, 1909; discharge, 2 second-feet.

Regulation.— By the Jamesville reservoir for the water-supply of the Erie canal, capacity 170,000,000 cubic feet, water-surface area 252 acres. Daily flow affected by operation of mill about a mile upstream.

Discharge measurements of BUTTERNUT CREEK AT JAMESVILLE, for the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
		Feet	*Sec.-ft.*
1917			
Oct. 30	M. W. Grimes and J. Labishiner	3.02	82.7
1918			
Mar. 8	P. F. Scully and J. Labishiner	3.11	123
April 16	M. W. Grimes	3.04	96.5

Daily gage height, in feet, of BUTTERNUT CREEK NEAR JAMESVILLE, for the year ended June 30, 1918. Marie Brandt Brown, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	5.2	4.35	4.35	3.05	2.2	2.15	2.95	2.6	4.4	4.2	3.2	2.85
2	5.05	4.4	4.05	3.0	2.15	2.15	3.0	2.55	4.35	4.15	3.2	2.75
3	5.0	4.3	4.05	3.05	2.15	2.1	3.0	2.45	4.25	4.15	3.2	2.7
4	4.9	4.35	3.95	3.15	2.2	2.1	3.0	2.5	4.3	4.25	3.15	2.65
5	4.65	4.3	3.85	3.25	2.15	2.05	3.1	2.55	4.3	4.2	3.15	2.8
6	4.6	4.25	3.7	3.25	2.1	2.0	3.05	2.45	4.4	4.15	3.1	2.85
7	4.55	4.25	3.45	2.85	2.05	1.95	2.85	2.5	3.95	4.1	3.15	2.85
8	5.15	4.35	3.4	2.9	2.15	2.05	2.9	2.6	3.45	4.05	3.25	2.85
9	5.25	4.4	2.85	2.8	2.05	2.15	2.95	2.65	3.4	4.05	3.2	2.8
10	5.55	4.35	2.9	2.85	2.15	2.15	2.95	2.3	3.95	3.9	3.2	2.85
11	5.45	4.25	3.05	2.95	2.2	2.2	3.0	2.9	3.85	3.85	3.3	2.9
12	5.05	3.05	2.95	2.85	2.15	2.25	3.05	3.05	4.05	3.9	3.35	2.85
13	4.95	3.0	3.0	2.9	2.05	2.35	2.95	3.15	4.15	3.75	3.45	2.65
14	5.0	2.85	3.0	3.15	2.05	2.3	3.0	3.15	4.15	3.65	3.35	2.65
15	5.05	2.75	3.05	3.1	2.05	2.9	3.0	3.05	4.05	3.65	3.2	2 6
16	5.05	2.75	2.9	3.2	2.1	3.35	2.95	3.05	4.15	3.35	3.4	2.6
17	4.85	3.0	2.85	3.15	2.15	3.25	3.05	3.05	4.05	3.1	3.3	2.55
18	4.7	2.95	2.95	3.3	2.1	3.05	3.1	3.1	4.05	3.1	3.25	2.5
19	4.55	3.05	2.85	3.4	2.15	3.15	3.05	3.2	4.0	3.1	3.0	2.5
20	4.5	2.95	2.85	3.55	2.1	3.25	2.9	3.15	4.0	3.05	3.0	2.55
21	4.65	2.95	3.0	3.7	2.1	3.3	2.85	3.05	3.9	3.75	2.9	2.65
22	4.55	3.65	3.15	3.75	2.0	3.4	2.85	3.2	3.75	3.7	2.95	2.65
23	4.5	3.45	3.05	3.9	2.05	3.3	2.95	3.15	3.8	3.55	3.0	2.6
24	4.5	3.4	3.0	3.65	2.15	3.25	2.95	3.75	3.75	3.55	3.0	2.55
25	4.5	3.35	3.1	3.6	2.2	3.25	2.85	3.8	3.7	3.4	3.05	2.55
26	4.45	3.3	3.15	3.6	2.2	3.15	2.9	4.05	3.6	3.3	3.0	2.6
27	4.35	3.45	3.05	3.75	2.15	3.2	2.8	4.05	3.55	3.25	2.9	2.6
28	4.45	3.35	3.1	4.0	2.15	3.15	2.75	4.25	3.5	3.25	3.05	2.55
29	4.35	4.55	3.05	4.05	2.15	3.05	2.65	......	3.45	3.2	3.0	2.65
30	4.3	4.4	3.4	2.35	2.05	3.05	2.65	......	3.45	3.2	2.85	2.8
31	4.3	4.45	......	2.15	......	3.0	2.55	......	4.25	.....	2.9	......

Daily discharge, in second-feet, of BUTTERNUT CREEK NEAR JAMESVILLE, for the year ended June 30, 1917

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	63.1	14.6	44.3	111	69.1	123	......	......	......	340	......	......
2	50.1	21.2	38.8	111	63.0	132	......	......	......	314	......	......
3	50.1	17.7	38.8	93.9	52.2	340	......	......	......	182	......	......
4	38.8	14.6	44.3	93.9	63.0	106	......	......	......	171	......	......
5	38.8	21.2	33.9	85.9	57.4	123	......	......	......	141	......	......
6	50.1	29.4	33.9	77.9	47.6	114	......	......	......	150	......	......
7	50.1	29.4	44.3	77.9	57.4	123	......	......	......	141	......	......
8	38.8	33.9	38.8	77.9	57.4	141	......	......	......	150	......	......
9	38.8	33.9	50.1	93.9	47.6	114	......	......	......	150	......	......
10	44.3	33.9	63.1	93.9	43.0	114	......	......	......	161	......	......
11	38.8	29.4	50.1	77.9	57.4	132	......	......	......	......	......	......
12	38.8	38.8	50.1	77.9	69.1	123	......	......	......	......	......	......
13	44.3	50.1	63.1	85.9	63.0	123	......	......	......	......	......	......
14	33.9	38.8	63.1	93.9	75.7	82.8	......	......	......	......	......	150
15	38.8	21.2	77.9	93.9	90.3	106	......	......	......	......	......	171
16	38.8	21.2	63.1	111	75.7	98.2	......	......	......	......	......	141
17	33.9	14.6	77.9	111	82.8	90.3	......	......	......	......	......	150
18	29.4	21.2	77.9	182	82.8	90.3	......	......	......	......	......	141
19	21.2	14.6	63.1	171	57.4	82.8	......	......	......	......	......	132
20	21.2	17.7	63.1	171	63.0	69.1	......	......	......	......	......	150

Daily discharge, in second-feet, of BUTTERNUT CREEK NEAR JAMESVILLE, for the year ended June 30, 1917 — *Continued*

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
21	17.7	21.2	70.0	182	98.2	69.1	......	......	......	......	......	218
22	17.7	29.4	70.0	182	114	63.0	......	......	......	......	......	218
23	21.2	29.4	70.0	182	106	69.1	......	......	......	......	......	194
24	14.6	33.9	70.0	150	123	57.4	......	......	......	......	......	150
25	14.6	38.8	50.1	141	132	52.2	......	......	......	......	......	141
26	21.2	50.1	50.1	141	419	63.0	......	......	......	......	......	132
27	33.9	50.1	63.1	123	218	69.1	......	......	......	......	......	150
28	29.4	44.3	77.9	98.2	206	69.1	......	......	......	......	......	218
29	21.2	56.6	93.9	106	182	69.1	......	......	......	......	......	218
30	14.6	56.6	102	90.3	161	75.7	......	......	......	......	......	194
31	17.7	56.6	......	90.3	......	......	......	......	......	......	......	......
Mean	33.1	31.8	59.9	115.4	101	99.5	......	......	......	......	......	......

NOTE.— January to March, ice period; discharge not computed. April 11 to June 13, gage out

Daily discharge, in second-feet, of BUTTERNUT CREEK NEAR JAMESVILLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	......	......	392	98.2	16.0	13.5	......	......	......	352	123	69.1
2	......	......	314	90.3	13.5	13.5	......	......	......	340	123	57.4
3	......	......	314	98.2	13.5	11.0	......	......	......	340	123	52.2
4	......	......	290	114	16.0	11.0	......	......	......	365	114	47.6
5	......	......	266	132	13.5	8.55	......	......	......	352	114	63.0
6	......	......	230	132	11.0	6.3	......	......	......	340	106	69.1
7	......	......	171	69.1	8.55	4.8	......	......	......	327	114	69.1
8	......	......	161	75.7	13.5	8.55	......	......	......	314	132	69.1
9	......	......	69.1	63.0	8.55	13.5	......	......	......	314	123	63.0
10	......	......	75.7	69.1	13.5	13.5	......	......	......	278	123	69.1
11	......	......	98.2	82.8	16.0	16.0	......	......	......	266	141	75.7
12	......	98.2	82.8	69.1	13.5	18.8	......	......	......	278	150	69.1
13	......	90.3	90.3	75.7	8.55	24.6	......	......	......	242	171	47.6
14	......	69.1	90.3	114	8.55	21.6	......	......	......	218	150	47.6
15	......	57.4	98.2	106	8.55	75.7	......	......	......	218	123	43.0
16	......	57.4	75.7	123	11.0	150	......	......	......	150	161	43.0
17	......	90.3	69.1	114	13.5	132	......	......	......	106	141	38.8
18	......	82.8	82.8	141	11.0	98.2	......	......	......	106	132	35.0
19	......	98.2	69.1	161	13.5	114	......	......	......	106	90.3	35.0
20	......	82.8	69.1	194	11.0	132	......	......	......	98.2	90.3	38.8
21	......	82.8	90.3	230	11.0	141	......	......	......	242	75.7	47.6
22	......	218	114	242	6.30	161	......	......	......	230	82.8	47.6
23	......	171	98.2	278	8.55	141	......	......	......	194	90.3	43.0
24	......	161	90.3	218	13.5	132	......	......	......	194	90.3	38.8
25	......	150	106	206	16.0	132	......	......	......	161	98.2	38.8
26	......	141	114	206	16.0	114	......	......	......	141	90.3	43.0
27	......	171	98.2	242	13.5	123	......	......	......	132	75.7	43.0
28	......	150	106	302	13.5	114	......	......	......	132	98.2	38.8
29	......	447	98.2	314	13.5	98.2	......	......	......	123	90.3	47.6
30	......	405	161	24.6	8.55	98.2	......	......	......	123	69.1	63.0
31	......	419	......	13.5	......	90.3	......	......	......	......	75.7	......
Mean	......	......	139	142	12.1	72.0	......	......	......	226	112	51.8

NOTE.— January to March, ice period; discharge not computed. Discharge, July 1 to August 11, inclusive, doubtful; not published.

Monthly discharge of BUTTERNUT CREEK NEAR JAMESVILLE, for the year ended June 30, 1917

[Drainage area, 53 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	63.1	14.6	33.1	0.625	0.72
August	56.6	14.6	31.8	0.600	0.69
September	102	33.9	59.9	1.13	1.26
October	182	77.9	115	2.17	2.50
November	419	43.0	101	1.91	2.13
December	340	52.2	99.5	1.88	2.17

Monthly discharge of BUTTERNUT CREEK NEAR JAMESVILLE, for the year ended June 30, 1918

[Drainage area, 53 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
September	392	69.1	139	2.62	2.92
October	314	13.5	142	2.68	3.09
November	16.0	6.30	12.1	0.228	0.25
December	161	4.80	72.0	1.36	1.57
January	....	....	....	....	....
February	....	....	....	....	....
March	....	....	....	....	....
April	365	98.2	226	4.26	4.75
May	171	69.1	112	2.11	2.43
June	75.7	35.0	51.8	0.977	1.09

LIMESTONE CREEK

DESCRIPTION

The natural source of Limestone creek is on the slope of Tinselor hills near Erieville, Madison county. In the construction of the Chenango canal, Tioughnioga creek was diverted and DeRuyter reservoir receives the drainage tributary to this stream above the point of diversion and also that from additional area tributary to Limestone creek, making a total area above the reservoir outlet of 18.8 square miles. The reservoir has a capacity of 504,468,000 cubic feet and a surface area of about 1.0

square mile. The stored waters are discharged through Limestone creek during the canal navigation season. Water is diverted to a head-race by a dam below Manlius. The head-race is used as a water-power canal to supply several mills at Fayetteville, at which place there is a second diverting dam. A feeder from the diverting dam enters Erie canal 1.2 miles below Fayettoville. Power is also developed on Limestone creek at Manlius and Edwards Falls. The headwaters of Limestone creek are at elevation 1,900 feet. DeRuyter reservoir is at elevation 1,286 feet. The fall of the stream is rapid in the first 3 miles below the reservoir, the elevation at the lower end of this reach at Delphi being 900 feet. From Delphi to Buellville the creek follows a winding course over a flat valley bottom averaging about one-half mile in width. The descent in 8 miles between these points is 150 feet. Between Buellville and Manlius, a distance of 2 miles, a fall of 200 feet occurs. This is mostly concentrated at Edwards Falls. The west, or Watervale branch of Limestone creek joins the main stream below Manlius. The precipitous descent of about 100 feet in a short distance occurs at this branch at Stone Quarry Falls. The drainage basin is shown on the Syracuse, Tully, Chittenango and Cazenovia sheets of the United States Geological Survey topographic maps.

LIMESTONE CREEK AT MANLIUS

Location.— At the Wilcox avenue bridge in the village of Manlius and above the entrance of the west, or Watervale branch.

Drainage area.— 67 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.—Gage height, July 23, 1907, to June 30, 1918. Discharge, January 1, 1911, to September 30, 1915.

Gage.— Standard chain gage attached to downstream side of bridge, read once daily to tenths.

Discharge measurements.— Made from downstream side of the bridge and by wading below gage.

Control.— Rapids about 600 feet below the gage, gravel and boulders, fairly permanent.

Extremes of discharge.— Current year: Maximum stage recorded, 6.2 feet, February 20 at 3 P. M.; discharge not available. Minimum stage recorded, 2.2 feet, January 6 at 4 P. M. and February 5 at 6:30 A. M.; discharge not available.

1911–1918: Maximum stage recorded, 7.6 feet, June 11, 1917, at 5:00 A. M.; discharge not available. Minimum stage recorded, 1.90 feet, August 23, 1913; discharge, 6 second-feet.

Diversion.— Tioughnioga creek, a tributary of the Susquehanna, is diverted to the DeRuyter reservoir and this territory above the point of diversion is included in the discharge area given above.

Regulation.— Seasonal by DeRuyter reservoir, daily by hydro-electric plant 1 mile upstream.

Daily gage height, in feet, of LIMESTONE CREEK AT MANLIUS, for the year ended June 30, 1918. J. R. Bixby, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	3.3	3.0	2.6	2.5	3.0	3.4	2.4	2.4	3.4	3.2	2.7	3.0
2.....	3.7	2.7	2.7	2.8	3.0	3.4	2.4	2.4	3.0	3.4	3.0	3.3
3.....	3.2	2.6	2.7	3.0	3.0	3.0	2.4	2.4	3.0	3.0	3.0	3.0
4.....	3.2	2.4	2.5	3.0	2.9	3.0	2.6	2.4	3.0	3.0	2.7	3.2
5.....	3.6	2.4	2.5	3.2	3.0	2.7	2.4	2.2	3.4	2.8	2.7	3.0
6.....	3.2	2.6	2.5	3.0	3.0	2.6	2.2	2.4	3.5	2.6	3.0	3.0
7.....	3.0	2.4	3.0	2.8	2.8	2.6	2.4	2.8	3.0	2.7	3.0	3.7
8.....	3.7	3.2	2.7	3.0	3.0	2.6	2.4	2.4	3.7	2.7	3.0	3.4
9.....	3.2	3.0	2.5	3.7	3.0	2.6	2.4	2.6	3.5	3.8	3.0	3.0
10.....	3.6	3.0	2.5	3.5	3.0	2.6	2.4	2.4	3.7	3.2	2.7	3.0
11.....	3.8	2.8	2.4	3.0	2.8	2.6	2.6	2.6	3.4	3.6	2.7	3.2
12.....	4.0	2.7	2.4	3.5	3.0	2.4	2.4	3.4	4.0	3.0	2.7	4.5
13.....	3.2	3.0	2.4	3.5	3.0	2.4	2.4	4.5	5.45	3.0	3.0	4.0
14.....	3.2	3.0	2.4	3.0	3.0	*a*	2.8	5.0	4.2	3.0	3.5	3.2
15.....	3.2	3.3	2.4	3.2	2.9	2.6	2.6	4.0	3.7	3.2	3.0	3.4
16.....	3.0	3.0	2.4	3.0	2.8	3.0	2.6	4.0	3.2	3.0	3.0	3.05
17.....	2.8	2.8	2.4	3.0	3.2	3.6	2.4	3.5	3.6	3.0	3.0	3.0
18.....	3.4	2.8	2.5	2.8	3.0	3.2	2.4	4.0	3.7	3.7	3.0	3.0
19.....	3.2	2.8	2.4	3.7	3.2	3.0	2.6	5.8	3.6	3.2	3.2	3.0
20.....	3.0	3.0	2.7	4.0	3.0	3.0	2.6	5.8	3.6	3.2	3.0	3.2
21.....	2.6	3.0	2.5	4.0	3.0	3.0	2.6	5.0	3.4	3.2	3.4	3.7
22.....	3.0	3.4	2.7	4.0	3.0	3.0	2.4	4.2	3.6	3.5	3.2	3.5
23.....	3.0	3.0	2.5	4.5	3.6	3.0	2.4	3.7	3.2	3.2	3.0	3.3
24.....	3.6	2.6	2.7	4.0	3.2	3.0	2.8	3.8	3.5	3.2	3.0	2.9
25.....	3.0	2.6	2.5	5.0	3.2	2.6	2.8	4.0	3.2	3.0	3.0	3.0
26.....	3.2	2.5	2.75	5.0	3.0	2.4	3.0	5.2	3.2	3.0	3.55	3.0
27.....	3.0	2.4	2.85	5.0	3.0	2.4	3.0	4.3	3.2	3.2	3.4	3.0
28.....	3.4	2.4	2.75	4.5	3.0	2.4	2.6	4.0	3.4	3.0	3.6	3.0
29.....	2.7	3.0	3.0	4.0	3.7	2.4	2.8	......	3.4	3.0	3.7	3.3
30.....	3.3	2.7	3.0	4.0	3.4	2.4	2.4	......	3.2	2.8	3.2	3.3
31.....	3.0	2.7	......	3.6	......	2.4	2.4	......	3.4	......	3.0	......

a No record.

LIMESTONE CREEK AT FAYETTEVILLE

This station, established August 27, 1905, is located above the State dam at the head of the Erie canal feeder at Fayetteville. A staff gage, secured to the south abutment of the State dam, was used until August 23, 1916, when a standard Type A gage, No. 194, was erected on the west wing of the south abutment of the bridge over the feeder. This gage has a range of 6 feet, between elevations 429.0 and 435.0. The gage bench-mark is a square cut in top of wall at gage and is at elevation 434.664 (B. C. datum).

The gage is read once daily — at noon — to tenths.

Daily elevation of water-surface (B. C. datum) of Limestone Creek above Dam at Fayetteville, for the year ended June 30, 1918. Geo. Ebeling and D. R. Burhans, Observers

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	432.7	430.8	431.4	431.1	431.9	431.3	432.4	432.4	432.8	431.8	431.7	431.3
2.....	432.6	430.8	431.3	431.2	431.8	431.6	432.4	432.4	433.0	431.9	431.75	431.2
3.....	432.5	430.7	431.2	431.1	431.8	431.7	432.4	432.4	433.0	431.8	431.7	431.25
4.....	432.4	430.7	431.3	431.0	431.7	431.8	432.4	432.4	433.2	431.7	431.65	431.3
5.....	432.3	430.6	431.2	431.0	431.8	431.8	432.4	432.4	433.0	431.7	431.6	431.3
6.....	432.1	430.7	431.2	431.1	431.7	431.7	432.4	432.4	433.0	431.7	431.6	431.25
7.....	432.0	430.9	431.2	431.2	431.7	431.8	432.4	432.4	432.9	431.65	431.0	431.4
8.....	431.9	431.0	431.15	431.3	431.8	431.9	432.4	432.4	433.0	431.65	430.9	431.5
9.....	431.8	431.4	431.2	431.3	431.7	432.0	432.4	432.4	432.8	431.7	430.8	431.4
10.....	431.7	431.3	431.2	431.4	431.6	432.0	432.4	432.4	432.6	431.8	430.8	431.4
11.....	431.6	431.2	431.2	431.3	431.7	432.2	432.4	432.4	432.6	431.85	431.1	431.5
12.....	431.6	431.2	431.1	431.2	431.6	432.2	432.4	432.4	432.4	431.8	431.1	431.8
13.....	431.5	431.1	431.2	431.3	431.7	432.2	432.4	432.4	432.4	431.8	431.2	431.5
14.....	431.4	431.0	431.1	431.2	431.6	432.2	432.4	432.4	432.6	432.0	431.65	431.4
15.....	431.5	431.1	431.0	431.3	431.6	432.2	432.4	432.4	432.4	432.0	431.65	431.3
16.....	431.5	431.2	431.0	431.4	431.7	432.0	432.4	432.4	432.2	431.9	431.6	431.3
17.....	431.4	431.2	431.0	431.5	431.7	432.0	432.4	432.4	432.4	431.8	431.6	431.3
18.....	431.4	431.1	431.1	431.6	431.65	432.0	432.4	432.4	432.6	432.3	431.6	431.3
19.....	431.3	431.1	431.2	431.7	431.6	432.0	432.4	432.4	432.8	431.9	431.55	431.3
20.....	431.4	431.0	431.4	432.0	431.7	432.4	432.4	432.4	432.6	431.8	431.1	431.25
21.....	431.3	431.0	431.5	431.8	431.7	432.4	432.4	432.4	432.4	431.8	431.1	431.3
22.....	431.4	431.1	431.5	431.7	431.8	432.5	432.4	432.4	432.3	432.1	430.9	431.45
23.....	431.5	431.0	431.1	431.6	431.8	432.4	432.4	432.4	432.2	431.9	430.9	431.55
24.....	431.4	431.1	431.2	431.5	431.7	432.4	432.4	432.4	432.0	431.85	430.75	431.4
25.....	431.3	431.1	431.2	431.4	431.7	432.4	432.4	432.4	432.0	431.8	430.7	431.4
26.....	431.3	431.1	431.3	431.5	431.8	432.4	432.4	432.4	432.0	431.75	431.0	431.3
27.....	431.2	431.0	431.4	431.6	431.9	432.4	432.4	432.6	432.0	431.7	431.85	431.25
28.....	431.1	431.2	431.3	431.5	431.8	432.4	432.4	432.8	432.0	431.7	431.65	431.3
29.....	430.95	431.4	431.2	431.6	431.6	432.4	432.4	......	431.9	431.65	431.6	431.3
30.....	431.0	431.5	431.2	432.0	431.2	432.4	432.4	......	431.8	431.65	431.55	431.45
31.....	430.9	431.4	......	432.0	......	432.4	432.4	......	431.8	......	431.5	......

LIMESTONE FEEDER AT FAYETTEVILLE

This station, established August 27, 1905, is located at the head of the Limestone feeder at Fayetteville.

The record is of the water-surface below the gates supplying the feeder for Limestone creek. Elevations were obtained by use of a reference point until August 23, 1916, when a standard Type A gage, No. 193, was erected on the east end of the north abutment of the bridge over the feeder at the dam. This gage has a range of 8 feet, between elevations 426.0 and 434.0 (B. C. datum).

The gage is read once daily — at noon — to tenths.

Daily elevation of water-surface (B. C. datum) of LIMESTONE FEEDER AT FAYETTEVILLE, for the year ended June 30, 1918. Geo. Ebeling and D. R. Burhans, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	429.4	429.1	429.1	429.3	429.3	428.0	......	......	......	......	......	429.15
2	429.3	429.1	429.1	429.2	429.2	428.2	......	......	......	......	......	429.3
3	429.3	429.0	429.2	429.1	429.3	428.3	......	......	......	......	......	429.3
4	429.2	429.0	429.2	429.1	429.35	428.4	......	......	......	......	......	429.3
5	429.2	429.0	429.1	429.2	429.3	428.6	......	......	......	......	......	429.35
6	429.3	429.0	429.1	429.2	429.2	428.7	......	......	......	......	......	429.3
7	429.2	429.1	429.2	429.1	429.3	428.6	......	......	......	......	......	429.3
8	429.1	429.2	429.05	429.1	429.3	428.4	......	......	......	......	......	429.3
9	429.2	429.3	429.1	429.2	429.2	427.6	......	......	......	......	......	429.2
10	429.3	429.4	429.1	429.3	429.2	427.2	......	......	......	......	......	429.3
11	429.4	429.4	429.2	429.3	429.3	......	......	......	......	......	......	429.3
12	429.3	429.3	429.1	429.2	429.2	......	......	......	......	......	......	429.4
13	429.3	429.2	429.1	429.1	429.2	......	......	......	......	......	......	429.3
14	429.4	429.1	429.2	429.2	429.2	......	......	......	......	......	......	429.1
15	429.3	429.1	429.1	429.1	429.25	......	......	......	......	......	......	429.1
16	429.3	429.2	429.1	429.2	429.2	......	......	......	......	......	......	429.3
17	429.2	429.3	429.2	429.2	429.3	......	......	......	......	......	......	429.3
18	429.2	429.2	429.2	429.3	429.25	......	......	......	......	......	......	429.3
19	429.3	429.1	429.3	429.3	429.2	......	......	......	......	......	......	429.3
20	429.2	429.2	429.3	429.2	429.3	......	......	......	......	......	......	429.3
21	429.2	429.3	429.35	429.2	429.3	......	......	......	......	......	......	429.3
22	429.2	429.2	429.3	429.3	429.2	......	......	......	......	......	......	429.3
23	429.1	429.2	429.2	429.2	429.2	......	......	......	......	......	......	429.3
24	429.1	429.1	429.2	429.3	429.2	......	......	......	......	......	426.5	429.3
25	429.0	429.1	429.3	429.3	429.1	......	......	......	......	......	427.5	429.3
26	429.1	429.2	429.2	429.2	429.0	......	......	......	......	......	428.9	429.3
27	429.0	429.1	429.3	429.2	428.8	......	......	......	......	......	429.2	429.25
28	429.1	429.2	429.2	429.2	428.6	......	......	......	......	......	429.2	429.3
29	429.25	429.3	429.1	429.3	428.4	......	......	......	......	......	429.1	429.3
30	429.2	429.2	429.2	429.2	428.2	......	......	......	......	......	429.15	429.4
31	429.2	429.1	......	429.2	......	......	......	......	......	......	429.15	......

NOTE.— Water drawn out of feeder, December 10 to May 24.

BLACK RIVER DRAINAGE BASIN

BLACK RIVER

DESCRIPTION

Black river rises in the western part of Hamilton county, flows southwestward across Herkimer county into Oneida county, turns near Forestport and runs somewhat west of north through Lewis county to eastern Jefferson county and then flows westward to Black River bay, at the eastern extremity of Lake Ontario. Its total drainage area is 1,930 square miles. The upper part of the basin is very rugged and mountainous, contains a large number of lakes and is in a part of the Adirondack forest.

The mean annual precipitation is about 40 inches, ranging from 55 inches in the extreme headwaters to perhaps 30 inches near Lake Ontario. The winters are generally quite severe and the stream flow is affected by ice for periods of several months.

The regimen of the river is controlled by storage on its upper tributaries (including Beaver river at Beaver River), a series of reservoirs on the headwaters of Moose river and additional reservoirs at Forestport and on the headwaters of the main river.

Water is diverted from Black river through Forestport feeder to supply the Black River canal at Boonville. A portion of this diverted water flows northward from Boonville and enters Black river again at Lyons Falls; the remainder flows southward through the Black River canal and enters the Erie canal at Rome.

BLACK RIVER NEAR BOONVILLE

Location.— At highway bridge about 1 mile above the mouth of Sugar river, about 2 miles northeast of Boonville, Oneida county, and 2 miles, by river, downstream from Hawkinsville.

Drainage area.— 303 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— February 16, 1911, to June 30, 1918.

Gage.— Chain, near center of left span, downstream side of bridge. Staff gage, graduated from 6.0 to 13.0 feet, on downstream side of right abutment, used for high-water readings; read by W. D. Charbonneau.

Discharge measurements.— Made from a cable about ½ mile above gage at high stages and by wading near the cable at low stages.

Channel and control.— Rough and full of boulders; permanent.

Extremes of discharge.— Current year: Maximum stage recorded during year, 10.8 feet at 5 P. M., March 22 (stage-discharge relation affected by ice). Maximum discharge occurred at 5 P. M., April 10, gage height, 7.85 feet, discharge, 2,680 second-feet. Minimum stage recorded, 3.02 feet at 4 P. M., August 5; discharge, 28 second-feet.

1911–1918: Maximum stage, about 12.5 feet during night of March 28, 1913, determined by leveling from flood-mark; discharge, about 10,000 second-feet. Minimum stage recorded, 3.0 feet at 8 A. M., September 29 and November 8, 1913, and October 8, 1914; discharge, 27 second-feet.

Ice.— Stage-discharge relation affected by ice.

Regulation and diversion.— The State dam at Forestport, about 8 miles upstream, provides a reservoir with a capacity of about 2,000,000,000 cubic feet. Water is diverted from this reservoir during the navigation season through the Forestport feeder, flowing west to a basin in Boonville. The Black River canal flows north from this basin, entering the Black river at the foot of Lyons falls. A spillway from the basin overflows into Mill creek, a tributary to Black river. Water flowing through these two channels returns to the river below the gaging station, thus passing around it. The Black River canal also flows south from Boonville, passing out of the Black river basin and entering the summit level of the Erie canal (or Barge canal) at Rome.

Occasional discharge measurements have been made at three points, to indicate the distribution of the diverted water. The water entering Boonville through the Forestport feeder has been measured at the highway bridge, about a mile northeast of Boonville. During October, 1915, two water-stage recorders were installed on this canal to obtain a continuous record of the flow. This record is published as a separate station, "Forestport feeder near Boonville." The water flowing north from the basin through the Black River canal has been measured at the highway bridge just below the lock into this canal near the railroad station. The water flowing south from the basin has been measured at a private farm bridge about a mile southeast of Boonville. During September, 1915, two water-stage recorders were installed on this canal, to obtain a continuous record of the flow, which is published as a separate station, called "Black River canal, flowing south, near Boonville."

Accuracy.— Stage-discharge relation permanent, but affected by ice during a large part of the period, December to March. Rating curve well defined between 35 and 2,800 second-feet and fairly well defined between 2,800 and 4,500 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good, except for periods when the stage-discharge relation was affected by ice, for which they are fair.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of BLACK RIVER NEAR BOONVILLE, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Dec. 19 *a*	J. W. Moulton	5.67	318
1918			
Jan. 11 *a*	E. D. Burchard	4.69	170
Feb. 9 *b*	J. W. Moulton	4.85	173
Mar. 14 *a*	J. W. Moulton	7.08	586
Mar. 19 *a*	J. W. Moulton	6.85	574
April 13	E. D. Burchard	6.70	1,400
June 6	M. H. Carson	3.65	92

a Measurement made through partial ice cover.
b Measurement made through complete ice cover.

Daily discharge, in second-feet, of BLACK RIVER NEAR BOONVILLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	1,290	56	680	90	4,140	680	220	120	1,200	2,500	1,290	145
2.....	1,460	52	450	78	1,940	630	220	110	850	2,380	1,210	154
3.....	1,140	49	370	127	1,370	558	220	120	800	2,500	1,140	136
4.....	855	40	238	250	1,210	450	220	120	850	2,380	1,210	111
5.....	630	31	184	305	1,060	335	200	100	900	2,160	1,210	97
6.....	490	33	184	490	920	227	190	90	800	2,160	1,060	97
7.....	370	36	174	735	705	227	190	180	650	2,160	920	430
8.....	335	63	205	680	855	238	190	160	550	2,270	855	920
9.....	205	145	174	605	680	250	180	180	600	2,270	795	630
10.....	154	205	111	580	535	260	170	200	700	2,620	735	305
11.....	250	216	90	580	335	280	220	240	600	2,380	795	194
12.....	680	127	84	558	275	300	440	300	500	1,740	795	164
13.....	490	111	56	795	250	300	280	460	480	1,400	1,060	154
14.....	470	104	59	1,140	194	320	300	480	600	1,740	1,540	97
15.....	390	84	70	1,140	512	320	340	550	600	1,940	1,370	90
16.....	450	72	97	1,140	1,540	320	280	550	850	2,050	1,210	63
17.....	305	97	90	1,060	1,540	320	240	460	1,200	1,940	85	56
18.....	174	111	63	855	1,210	320	200	440	1,200	1,740	920	40
19.....	111	119	56	795	1,140	320	190	550	1,000	1,540	795	36
20.....	66	111	49	795	855	320	200	650	800	1,840	680	38
21.....	119	97	90	795	735	300	180	900	1,600	1,940	735	35
22.....	164	119	111	795	735	280	200	1,100	2,400	1,740	855	205
23.....	127	490	127	735	630	280	200	1,100	2,400	1,540	795	470
24.....	97	2,980	97	795	512	260	180	1,200	2,200	1,540	680	370
25.....	90	2,380	84	795	450	260	150	1,200	2,160	1,370	680	290
26.....	66	795	78	795	430	240	140	1,400	2,050	1,370	680	262
27.....	59	335	59	855	450	220	140	1,700	2,160	1,210	795	227
28.....	72	250	84	920	450	220	120	1,900	2,380	990	1,060	164
29.....	68	390	53	1,940	512	220	95	......	2,270	1,060	855	84
30.....	70	630	63	3,750	535	220	100	......	2,160	1,210	680	275
31.....	53	855	......	4,820	......	200	110	......	2,380	......	227	......
Mean...	365	361	144	961	893	312	203	590	1,290	1,860	919	211

NOTE.— Discharge, December 10 to March 24, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of BLACK RIVER NEAR BOONVILLE, for the year ended June 30, 1918

[Drainage area, 303 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July..............................	1,460	53	365	1.20	1.38
August..............................	2,980	31	361	1.19	1.37
September..............................	680	49	144	0.475	0.53
October..............................	4,820	78	961	3.17	3.66
November..............................	4,140	194	893	2.94	3.28
December..............................	680	200	312	1.03	1.19
January..............................	440	95	203	0.670	0.77
February..............................	1,900	90	590	1.95	2.03
March..............................	2,400	480	1,290	4.26	4.91
April..............................	2,620	990	1,860	6.14	6.85
May..............................	1,540	227	919	3.03	3.47
June..............................	920	35	211	0.696	0.78
The year..............................	4,820	31	675	2.23	30.22

FORESTPORT FEEDER NEAR BOONVILLE

Location.— Slope station at the lower end of feeder, above the point where it enters the basin at Boonville. A spillway takes water from the feeder below gage No. 2, discharging into Mill creek and entering Black river below the Boonville gaging station. Other spillways above Hawkinsville discharge into Black river above the gaging station. There are no spillways between gage No. 1 and gage No. 2. The sum of this record and the record for the Black river near Boonville indicates the total run-off of the Black river basin.

Records available.— Occasional current-meter measurements, 1900 and 1905 to 1915. Continuous record, October 30, 1915, to June 30, 1918.

Gages.— Two Gurley 7-day water-stage recorders with natural scale for gage heights. The float wells are 1½ by 2 feet, inside dimensions, the bottoms of which are about 1½ feet below the normal elevation of water-surface in the canal. They are 2.53 miles apart.

Gage No. 1 is located at the downstream end of the left abutment of the steel highway bridge in the village of Hawkinsville.

Gage No. 2 is located on the left bank just below a farm bridge, about 1 mile above the basin at Boonville.

These gages and the two gages in the Black River canal, flowing south, near Boonville, are all set at the same datum; inspected by Charles Nugent.

Discharge measurements.— Made from the steel highway bridge at gage No. 1 in Hawkinsville.

Ice.— There is usually no flow in the canal during the winter season. Water was observed in the canal several times during the winter of 1917-18 and a few current-meter measurements of the discharge were made.

Regulation.— Flow in the feeder is regulated at the outlet of Forestport reservoir.

Accuracy.— The variation of the coefficient in Chezy formula, as indicated by discharge measurements, seems consistent. Results good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of FORESTPORT FEEDER NEAR BOONVILLE, during the year ended June 30, 1918

Date	Made by	Gage Height: Gage No. 1	Gage Height: Gage No. 2	Discharge
		Feet	*Feet*	*Sec.-ft.*
1917				
July 13	C. C. Covert	3.19	1.842	273
July 27	E. D. Burchard	2.998	1.742	225
July 27	E. D. Burchard	3.016	1.746	225
Aug. 15	E. D. Burchard	3.280	1.848	252
Aug. 15	E. D. Burchard	3.280	1.844	251
Sept. 3	C. C. Covert	2,90	1.56	205
Sept. 26	E. D. Burchard	3.045	1.774	216
Sept. 26	E. D. Burchard	3.038	1.766	219
Oct. 25	O. W. Hartwell	3.254	1.934	239
Nov. 13	E. D. Burchard	3.240	1.877	262
Nov. 13	E. D. Burchard	3.239	1.876	262
1918				
Feb. 9 *a*	J. W. Moulton	....	....	60
Mar. 14 *a*	J. W. Moulton	....	....	21
Mar. 19 *a*	J. W. Moulton	....	....	23
April 13	M. H. Carson	....	....	40
June 6	M. H. Carson	3.222	1.858	281
June 27	J. W. Moulton	3.002	1.592	241
June 27	J. W. Moulton	3.026	1.625	246

a Measurement made through complete ice cover.

Daily discharge, in second-feet, of FORESTPORT FEEDER NEAR BOOMVILLE, for the year ended June 30, 1918

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	265	233	225	266	235	......	......	......	......	......	......	134
2	257	245	218	255	227	......	......	......	......	......	......	194
3	260	234	227	250	246	......	......	......	......	......	......	238
4	296	228	254	246	239	......	......	......	......	......	......	226
5	289	217	246	248	271	......	......	......	......	......	......	237
6	300	212	221	246	284	......	......	......	......	......	......	259
7	294	224	221	238	288	......	......	......	......	......	......	261
8	280	231	233	230	300	......	......	......	......	......	......	251
9	280	248	226	214	262	......	......	......	......	......	......	228
10	287	238	233	257	263	......	......	......	......	......	......	230
11	269	230	241	......	264	......	......	......	......	......	......	224
12	207	231	238	......	261	......	......	......	......	......	......	230
13	254	245	230	......	261	......	......	......	......	......	......	248
14	278	246	217	......	257	......	......	......	......	......	......	259
15	280	243	229	......	......	......	......	......	......	......	......	248
16	276	252	227	......	......	......	......	......	......	......	......	238
17	276	250	220	......	......	......	......	......	......	......	......	236
18	271	233	226	......	......	......	......	......	......	......	......	235
19	261	228	238	......	......	......	......	......	......	......	......	255
20	255	227	235	261	......	......	......	......	......	......	......	240
21	246	233	235	255	......	......	......	......	......	......	......	226
22	241	254	237	252	......	......	......	......	......	......	......	212
23	245	230	235	235	......	......	......	......	......	......	......	254
24	247	265	243	273	......	......	......	......	......	......	......	265
25	256	229	231	246	......	......	......	......	......	......	......	256
26	245	239	222	230	......	......	......	......	......	......	......	244
27	244	217	231	217	......	......	......	......	......	......	......	240
28	266	208	245	238	......	......	......	......	......	......	......	240
29	241	227	242	238	......	......	......	......	......	......	......	228
30	240	220	252	258	......	......	......	......	......	......	......	212
31	244	214	......	250	......	......	......	......	......	......	......	......
Mean	263	233	233	244	255	......	......	......	......	......	......	235

NOTE.— See note under table of monthly discharge.

Monthly discharge of FORESTPORT FEEDER NEAR BOONVILLE, for the year ended June 30, 1918

MONTH	DISCHARGE IN SECOND-FEET		
	Maximum	Minimum	Mean
July	300	207	263
August	265	212	233
September	254	217	233
October	273	214	244
November	300	227	255
December	....	....	....
January	....	....	....
February	....	....	....
March	....	....	....
April	....	....	....
May	....	....	....
June	265	134	235

NOTE.— Water was observed in this canal several times during the closed season, from December to May, inclusive. A few current-meter measurements were made of the flow, which are given in the list of measurements.

BLACK RIVER CANAL, FLOWING SOUTH, NEAR BOONVILLE

Location.— Slope station in summit level of Black River canal near Boonville, Oneida county.

Records available.— Occasional discharge measurements, 1900 and 1905 to 1915. Continuous record, September 16, 1915, to June 30, 1918.

Gages.— Gurley water-stage recorders with natural scale for gage heights. They are 1.81 miles apart. These gages and the two gages in the Forestport feeder near Boonville are all set at the same datum.

Gage No. 1 is located on the right bank (opposite tow-path) about 50 feet downstream from the collector's office in Boonville.

Gage No. 2 is located on the right bank (opposite tow-path) about 300 yards above lock 70 and 50 yards above the spillway from the canal into Lansingkill. Recorders inspected by Philip Joynt.

Discharge measurements.— Made from the steel and concrete highway bridge in the village of Boonville, a short distance below gage No. 1.

Diversions.— There are no diversions between gage No. 1 and gage No. 2. This station indicates the amount of water diverted from the Black river into the Mohawk river drainage for canal purposes.

Regulation.— Flow in the canal is regulated by the operation of the spillway and sluice-gates at lock 70 and also by discharge of Forestport feeder into the basin at Boonville.

Ice.— There is no flow in the canal during the frozen season.

Accuracy.— The variation of the coefficient in Chezy formula, as indicated by discharge measurements, seems consistent. Results good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of BLACK RIVER CANAL, FLOWING SOUTH, NEAR BOONVILLE during the year ended June 30, 1918

DATE	Made by	GAGE HEIGHT		Discharge
		Gage No. 1	Gage No. 2	
1917		*Feet*	*Feet*	*Sec.-ft.*
July 13	C. C. Covert	1.52	....	190
July 26	E. D. Burchard	1.491	1.126	180
July 27	E. D. Burchard	1.434	1.074	181
July 27	E. D. Burchard	1.488	1.078	178
Aug. 15	E. D. Burchard	1.432	0.930	180
Aug. 15	E. D. Burchard	1.440	0.940	176
Aug. 15	E. D. Burchard	1.428	0.940	182
Sept. 3	C. C. Covert	1.181	0.545	145
Sept. 25	E. D. Burchard	1.571	1.110	172
Sept. 25	E. D. Burchard	1.559	1.106	174
Oct. 26	O. W. Hartwell	1.465	1.200	151
Nov. 13	E. D. Burchard	1.550	1.286	175
Nov. 13	E. D. Burchard	1.526	1.279	168
Nov. 13	E. D. Burchard	1.509	1.278	168
Nov. 14	E. D. Burchard	1.506	1.291	170
Nov. 14	E. D. Burchard	1.502	1.285	165
1918				
June 7	M. H. Carson	1.415	1.258	146
June 27	J. W. Moulton	1.457	1.345	126
June 27	J. W. Moulton	1.395	1.328	111
June 27	J. W. Moulton	1.285	1.085	163

Daily discharge, in second-feet, of BLACK RIVER CANAL, FLOWING SOUTH, NEAR BOONVILLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	197	181	151	182	173	......	......	......	......	......	......	100
2	176	173	173	184	182	......	......	......	......	......	......	217
3	185	178	175	179	175	......	......	......	......	......	......	202
4	184	180	172	179	177	......	......	......	......	......	......	205
5	196	177	161	173	197	......	......	......	......	......	......	196
6	191	178	163	179	199	......	......	......	......	......	......	227
7	183	178	165	186	184	......	......	......	......	......	......	182
8	195	176	168	179	199	......	......	......	......	......	......	194
9	186	186	169	178	192	......	......	......	......	......	......	180
10	194	178	166	183	184	......	......	......	......	......	......	179

Daily discharge, in second-feet, of BLACK RIVER CANAL, FLOWING SOUTH, NEAR BOONVILLE, for the year ended June 30, 1918 — *Continued*

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
11	180	174	173	194	180	......	......	......	......	......	......	184
12	154	176	167	173	180	......	......	......	......	......	......	188
13	190	182	169	171	185	......	......	......	......	......	......	184
14	189	178	162	......	181	......	......	......	......	......	......	195
15	193	180	168	......	......	......	......	......	......	......	......	182
16	192	183	162	......	......	......	......	......	......	......	......	177
17	186	185	164	......	......	......	......	......	......	......	......	173
18	177	181	168	......	......	......	......	......	......	......	......	173
19	178	172	171	......	......	......	......	......	......	......	......	173
20	180	176	169	......	......	......	......	......	......	......	......	176
21	181	179	172	148	......	......	......	......	......	......	......	178
22	179	177	170	157	......	......	......	......	......	......	......	159
23	175	172	171	166	......	......	......	......	......	......	......	170
24	182	173	175	176	......	......	......	......	......	......	......	171
25	183	171	166	171	......	......	......	......	......	......	......	169
26	182	165	175	170	......	......	......	......	......	......	......	163
27	174	143	172	171	......	......	......	......	......	......	......	151
28	189	141	174	176	......	......	......	......	......	......	......	161
29	175	165	174	186	......	......	......	......	......	......	......	157
30	169	164	181	198	......	......	......	......	......	......	......	146
31	176	146	......	182	......	......	......	......	......	......	......	......
Mean	183	173	169	176	182	......	......	......	......	......	......	177

Monthly discharge of BLACK RIVER CANAL, FLOWING SOUTH, NEAR BOONVILLE, for the year ended June 30, 1918

MONTH	DISCHARGE IN SECOND-FEET		
	Maximum	Minimum	Mean
July	197	*a* 154	183
August	187	141	173
September	181	151	169
October	198	148	176
November	199	173	182
December	....	....	....
January	....	....	....
February	....	....	....
March	....	....	....
April	....	....	....
May	....	....	....
June	227	160	177

a Estimated.
NOTE.— Canal dry, December to May, inclusive.

BLACK RIVER NEAR FELTS MILLS

This station, originally established by the United States Geological Survey, August 29, 1902, is now maintained by this Department. During the summer of 1910 the timber dam formerly used was replaced by a masonry dam located a few rods downstream. The wood-pulp mill has been in operation since 1907.

Location.— Near the village of Felts Mills at the dam of the LeFebvre Paper Company, formerly owned by the Black River Traction Company. The dam is 9 miles upstream from Watertown and 7 miles upstream from the old Huntingtonville gaging station, formerly maintained on this stream.

Drainage area.— 1,851 square miles.

Records available.— August 29, 1902, to June 30, 1918.

Gages.— The gage above the dam, located on the left bank of the stream about 100 feet upstream from the wheel racks and about the same distance above the crest of the dam, is a vertical enameled steel staff attached securely to the concrete wall, and steps provide access to the gage for reading. Lower gage is an enameled steel staff gage attached to a pile at the tail-race exit.

Discharge measurements.— Discharge over the spillway is calculated by means of the weir formula, using coefficients derived from experiments of the United States Geological Survey for a dam of similar cross-section. Discharge through the wheels is based on ratings furnished by the Paper Company.

Control.— Dam crest and power-wheels. The main crest of the dam is 300.45 feet long and 3.75 feet in width with a slope on the downstream face of about 1 on 1. There are two wings, one about 47 feet long and about 2.7 feet higher than the main crest, the other about 140 feet long and about 3 feet higher than the main crest. Flash-boards are used on the main crest. The mill contains four 72-in. and one 45-in. Smith turbines. A record is kept of the hours run, gate opening and head on each wheel.

Extremes of discharge.— Current year: Maximum stage recorded, April 4, 7 A. M. and 5 P. M., 16,900 second-feet. Minimum stage recorded, July 29, at 7 A. M., 369 second-feet.

1902–1918: Maximum stage recorded, March 28, 1913, at 5 P. M., estimated as 32,500 second-feet. Minimum stage recorded, August 6, 1907, 10 second-feet, due to artificial interruption of flow to fill pond at Herring.

Daily discharge, in second-feet, of BLACK RIVER NEAR FELTS MILLS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	4,800	1,340	2,340	1,380	10,500	2,450	1,930	1,960	7,660	13,100	5,660	3,750
2	4,910	1,230	2,880	2,270	12,000	2,580	1,910	1,960	7,350	14,300	6,760	2,950
3	4,490	1,190	2,650	2,070	11,400	2,920	1,980	1,960	6,510	15,000	7,060	2,470
4	3,210	1,440	2,420	2,330	8,730	2,700	1,920	2,020	6,260	16,900	6,760	2,500
5	3,720	1,390	2,410	2,750	7,560	1,880	1,990	1,670	5,430	15,900	6,760	2,400
6	2,810	1,450	2,050	3,150	6,340	2,150	2,000	1,960	5,110	14,100	6,200	2,180
7	2,340	1,340	1,510	3,150	4,790	2,040	1,930	1,790	4,410	11,800	5,510	2,720
8	1,610	1,190	1,920	3,150	4,660	2,100	1,940	2,000	4,150	10,700	6,210	3,940
9	1,860	1,340	782	3,240	4,100	2,220	2,000	1,920	3,690	11,000	6,480	4,630
10	1,730	1,390	1,330	3,080	3,720	2,090	2,000	1,920	3,470	11,200	6,760	4,980
11	1,920	1,670	1,610	2,840	3,080	2,160	1,930	1,840	3,300	11,600	7,480	4,630
12	2,730	1,140	2,040	2,680	3,080	2,400	2,060	1,870	3,300	10,900	7,790	4,390
13	3,460	1,860	1,400	3,470	3,160	2,040	2,000	2,100	3,400	10,300	8,270	5,780
14	3,060	1,740	1,270	4,590	3,090	2,390	1,940	2,390	3,640	9,960	9,250	6,080
15	2,270	1,680	1,230	5,140	2,780	2,390	2,040	2,900	4,000	9,420	9,250	5,400
16	2,420	1,500	1,230	5,360	2,630	2,330	1,990	3,450	3,890	8,750	9,440	4,370
17	2,200	1,500	1,230	5,040	2,850	2,400	1,990	3,460	3,790	8,760	8,270	3,520
18	1,860	1,230	1,230	4,730	2,170	2,330	1,930	3,290	3,860	8,760	7,260	3,260
19	2,060	977	1,550	4,270	3,250	2,480	1,920	3,640	4,620	9,430	6,220	3,020
20	1,920	1,180	1,440	6,180	3,420	2,340	1,980	6,090	4,620	8,970	4,860	2,650
21	1,780	1,440	1,380	6,730	3,330	2,080	2,160	6,650	8,080	9,780	4,100	2,160
22	1,310	1,440	1,380	6,460	3,330	1,850	2,080	5,970	9,950	9,790	4,620	2,040
23	1,600	1,550	1,380	5,260	3,330	2,020	2,220	5,470	12,000	9,610	4,970	2,100
24	1,440	1,440	1,380	5,480	3,420	1,270	2,220	5,610	11,200	9,960	4,860	2,350
25	1,550	4,470	1,550	6,320	1,900	1,180	2,080	5,600	11,200	9,780	4,380	4,550
26	1,540	3,030	1,230	5,590	2,940	1,760	2,020	7,130	11,200	9,010	4,200	4,450
27	1,440	2,630	1,280	5,250	2,860	1,960	2,030	7,770	10,700	7,950	4,290	3,000
28	1,340	2,480	1,430	6,190	2,350	2,000	2,020	7,940	10,100	6,630	5,280	1,440
29	417	1,980	1,440	6,460	2,430	1,940	2,020	......	9,420	6,180	4,860	1,860
30	1,340	1,850	1,370	7,020	2,300	1,810	1,960	......	8,590	5,470	4,620	1,490
31	1,280	2,190	......	8,980	......	1,930	1,960	......	11,500	......	4,040	......
Mean	2,272	1,686	1,611	4,536	4,383	2,135	2,005	3,655	6,658	10,500	6,209	3,369

Monthly discharge of BLACK RIVER NEAR FELTS MILLS, for the year ended June 30, 1918

[Drainage area, 1,851 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	4,910	417	2,272	1.23	1.42
August	4,470	977	1,686	0.911	1.05
September	2,880	782	1,611	0.870	0.97
October	8,980	1,380	4,536	2.45	2.82
November	12,000	1,900	4,383	2.37	2.64
December	2,920	1,180	2,135	1.15	1.33
January	2,220	1,910	2,005	1.08	1.25
February	7,940	1,670	3,655	1.97	2.06
March	12,000	3,300	6,658	3.60	4.15
April	16,900	5,470	10,500	5.67	6.33
May	9,440	4,040	6,209	3.35	3.87
June	6,080	1,440	3,369	1.82	2.03
The year	16,900	417	4,079	2.20	29.92

BLACK RIVER AT BLACK RIVER

Location.— About ¼ mile below the concrete arch highway bridge and the power-plant of the Northern New York Utilities Company and about ¾ mile below the village of Black River, Jefferson county.

Drainage area.— 1,870 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— March 2, 1917, to June 30, 1918.

Gage.— Vertical staff, in two sections, spiked to large cedar tree on the left bank about ¼ mile below the highway bridge; read by Erwin W. Hart.

Discharge measurements.— Made from a cable about 100 yards above the gage.

Channel and control.— Solid rock.

Extremes of discharge.— Current year: Maximum stage during year, 12.3 feet at 8:40 A. M., April 4; discharge, 16,300 second feet. Minimum stage, 1.05 feet at 2:45 P. M., July 29; discharge, about 16 second-feet.

1917–1918: Maximum stage recorded, 13.4 feet from 6 P. M., April 4, to 7 A. M., April 5, 1917; discharge, 19,300 second-feet. Minimum stage recorded, 1.05 feet at 2:45 P. M., July 29, 1917; discharge, about 16 second-feet.

Ice.— Stage-discharge relation affected by ice during extremely cold periods.

Regulation.— Seasonal distribution of flow is regulated by Beaver river flow, Fulton Chain lakes, Forestport reservoir and other storage reservoirs in the upper portion of the drainage basin. Some diurnal fluctuation at low stages, due to mills and power-plants above the station.

Accuracy.— Stage-discharge relation permanent. Rating curve well defined between 500 and 19,000 second-feet. Gage read to tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good except for days of low discharge, when they may be poor.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of BLACK RIVER AT BLACK RIVER, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
July 14	C. C. Covert	5.58	3,050
July 28	E. D. Burchard	3.88	1,150
July 28	E. D. Burchard	3.87	1,150
July 29	E. D. Burchard	3.73	1,060
July 29	E. D. Burchard	3.72	1,060
July 29	E. D. Burchard	3.25	711
July 29	E. D. Burchard	3.11	625
July 29	E. D. Burchard	1.18	25.6
Sept. 30	E. D. Burchard	3.33	794
Sept. 30	E. D. Burchard	3.51	857
1918			
Jan. 14 *a*	E. D. Burchard	5.78	1,340
Feb. 13 *a*	J. W. Moulton	5.28	1,370
Mar. 14	J. W. Moulton	6.20	3,760
Mar. 18	J. W. Moulton	6.20	3,930
April 6	E. D. Burchard	11.32	14,300

a Measurement made through partial ice cover.

Daily discharge, in second-feet, of BLACK RIVER AT BLACK RIVER, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	4,550	1,370	2,240	1,570	10,400	2,360	1,400	1,800	7,420	12,600	5,840	2,730
2	5,030	1,180	2,360	2,010	12,600	2,240	2,400	1,700	7,240	13,100	6,520	2,600
3	4,710	1,180	2,860	2,010	11,100	2,480	2,200	1,200	6,700	14,600	7,060	2,730
4	3,250	1,180	3,250	2,010	9,570	2,360	1,800	1,400	6,010	16,000	6,880	1,900
5	3,250	1,020	2,600	2,480	8,370	2,240	2,400	1,600	5,510	15,300	6,350	1,900
6	2,990	1,020	2,120	2,990	6,520	1,900	1,700	1,200	4,870	13,800	5,840	1,570
7	2,730	880	1,680	3,120	5,030	1,790	1,200	1,200	4,550	13,100	4,870	2,360
8	2,500	778	1,680	3,250	4,550	1,500	1,400	1,500	4,100	10,800	5,840	4,710
9	2,250	1,020	1,370	2,860	3,950	1,300	2,000	950	3,670	10,400	6,180	5,670
10	2,200	1,270	1,370	2,990	3,670	1,500	2,200	750	3,530	10,800	6,180	4,710
11	2,360	1,680	1,470	2,690	3,530	1,700	1,700	1,100	3,120	11,100	7,240	3,950
12	2,860	1,790	1,470	2,360	3,390	2,600	850	1,400	2,990	11,100	7,240	4,870
13	3,530	1,680	1,100	3,120	3,120	2,400	850	1,700	3,250	9,990	7,610	5,510
14	3,120	845	845	4,550	2,860	2,000	1,500	2,200	3,950	9,570	7,610	5,840
15	2,240	880	950	5,190	2,600	2,000	1,300	3,400	4,100	9,170	7,610	5,350
16	2,240	950	797	5,510	2,360	1,600	1,400	3,600	3,950	8,570	8,370	4,870
17	2,120	2,120	1,370	4,870	2,730	2,200	1,800	4,200	3,670	8,770	7,610	4,250
18	1,900	1,680	880	4,400	2,600	2,200	1,300	4,400	3,810	8,570	6,700	2,730
19	1,790	1,470	1,370	3,670	2,860	2,000	650	4,600	4,550	9,370	5,840	2,360
20	1,270	1,470	1,270	6,180	3,120	1,500	440	6,500	6,010	9,780	4,870	2,360
21	1,470	1,680	1,180	7,240	2,990	1,300	1,200	6,880	8,180	9,780	3,810	2,240
22	1,680	2,240	1,270	6,520	3,250	1,200	850	6,880	9,570	4,570	4,870	2,120
23	1,680	2,120	1,270	5,840	3,250	1,000	1,700	5,840	10,800	9,780	5,030	1,790
24	1,370	2,600	1,270	4,710	3,390	1,000	1,700	5,510	11,100	9,990	5,030	1,900
25	1,470	3,120	620	5,840	2,600	1,300	1,400	5,190	11,100	9,570	4,400	2,240
26	1,680	3,670	1,270	6,180	2,360	2,200	1,700	7,240	10,800	8,770	3,670	2,120
27	1,470	2,730	1,100	6,180	2,360	1,800	750	7,420	10,600	7,800	4,550	1,900
28	1,270	2,360	1,180	5,840	1,900	1,800	480	7,990	9,570	6,180	4,870	1,680
29	880	2,010	1,100	5,840	2,010	2,000	850	......	8,770	5,840	4,710	1,900
30	1,180	1,900	745	6,880	2,110	1,600	1,000	......	8,770	5,510	4,250	1,680
31	1,180	2,240	......	9,170	......	2,200	1,500	......	9,990	......	4,250	......
Mean	7,330	1,680	1,470	4,450	4,370	1,850	1,410	3,550	6,520	10,300	5,860	3,080

NOTE.—Discharge, December 7 to February 19, inclusive, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of BLACK RIVER AT BLACK RIVER, for the year ended June 30' 1918

[Drainage area, 1,870 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	5,030	880	7,330	1.25	1.44
August	3,670	778	1,680	0.898	1.04
September	3,250	620	1,470	0.786	0 88
October	9,170	1,570	4,450	2.38	2.74
November	12,600	1,900	4,370	2.34	2.61
December	2,600	1,000	1,850	0.989	1.14
January	2,400	440	1,410	0.754	0.87
February	7,990	750	3,550	1.90	1.98
March	11,100	2,990	6,520	3.49	4.02
April	16,000	5,510	10,300	5.51	6.15
May	8,370	3,670	5,860	3.13	3 61
June	5,840	1,570	3,080	1.65	1.84
The year	16,000	440	3,900	2.09	28.32

MOOSE RIVER

DESCRIPTION

Moose river is tributary to Black river at Lyons Falls, joining Black river just above the head of the fall of about 50 feet. The drainage of Moose river lies chiefly in Hamilton and Herkimer counties and comprises a wild, rugged and little inhabited region, largely forest-covered, but containing also large tracts of cut and burned-over lands and numerous and extensive swamps and lakes. The stream above the gaging station near McKeever comprises three main branches. The south branch is chiefly broad and sluggish. The area tributary to this branch contains extensive swamps and marshes and but few lakes, the most important lakes being the Limekill and Little Moose lakes. The middle branch is substantially a continuous chain of lakes, known as the Fulton Chain, extending from Old Forge a distance of about 15 miles upstream through eight different lakes. The outflow from Fulton Chain is artificially controlled by a State dam at Old Forge. The first to fourth lakes, inclusive, are at elevation 1,706 feet above tide. There is also a dam at the outlet of the sixth lake. Sixth, Seventh and Eighth lakes are at elevations 1,785 to 1,788 feet above tide. The north branch of the stream is made up of a large number of scattered lakes, the most important one being Big Moose lake. The lower course of the north branch is sluggish and tortuous. The drainage basin above McKeever is nearly all shown on the Big Moose, Raquette lakes, Old Forge and West

Canada lakes sheets of the United States Geological Survey topographic maps.

MOOSE RIVER AT MOOSE RIVER

Location.— In the village of Moose River, Lewis county, about 3 miles downstream from McKeever, 5 miles below the mouth of South branch of Moose river and nearly 20 miles above the junction of Black and Moose rivers at Lyons Falls.

Drainage area.— 370 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— June 5, 1900, to June 30, 1918.

Gage.— Staff in two sections, on the left bank a short distance above the cable; read by Mrs. Martha Hannan and Mr. H. W. Hoch. The gage datum was lowered 0.17 foot on February 28, 1903, and again 5.00 feet on January 1, 1913.

Discharge measurements.— Made from a cable a short distance below the gage.

Channel and control.— Cobblestones and boulders; fairly permanent. Current smooth, depth comparatively uniform.

Extremes of discharge.— Current year: Maximum stage recorded, 12.8 feet at 8 A. M., October 31; discharge, 6,680 second-feet. Minimum stage, 5.05 feet at 8 A. M., August 5 and 6; discharge, 58 second-feet.

1900–1918: Maximum stage recorded, 16.3 feet during the afternoon of March 27, 1913, determined by leveling from flood-marks; discharge, about 16,500 second-feet. Minimum stage recorded, 4.94 feet, July 21, 23, 25, 26 and 27, 1913; discharge, about 42 second-feet.

Ice.— Stage-discharge relation affected by ice.

Regulation.— A timber dam at McKeever, 3 miles upstream, is used for power and for the regulation of flow during log-driving. Seasonal distribution of flow affected by operation of the State dam at Old Forge. This regulation is indicated by a record from station, "Middle branch of Moose river at Old Forge."

Accuracy.— Stage-discharge relation practically permanent. Affected by ice for a large portion of the period from December to March, inclusive. Rating curve fairly well defined between 100 and 5,500 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results fairly good except for periods when the discharge is low or the stage-discharge relation is affected by ice. Results for latter periods fair.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Engineer and Surveyor.

Discharge measurements of MOOSE RIVER AT MOOSE RIVER, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Oct. 5	E. D. Burchard	6.61	488
Dec. 18 *a*	J. W. Moulton	6.50	277
1918			
Jan. 10 *b*	E. D. Burchard	6.70	151
Feb. 8 *b*	J. W. Moulton	8.00	284
Mar. 13 *b*	J. W. Moulton	8.63	568
April 12	E. D. Burchard	9.08	1,910
April 12	M. H. Carson	8.99	1,820

a Measurement made through partial ice cover.
b Measurement made through complete ice cover.

Daily discharge, in second-feet, of MOOSE RIVER AT MOOSE RIVER, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	910	176	352	460	2,660	441	360	170	1,100	800	2,760	625
2	1,080	164	230	369	2,000	441	280	240	950	1,500	2,860	670
3	1,020	216	500	274	1,830	404	240	180	650	2,600	2,180	540
4	1,080	216	500	441	1,590	386	300	110	950	2,600	1,910	422
5	1,080	69	386	580	1,320	336	280	200	700	2,400	1,590	369
6	860	126	289	810	1,200	352	260	220	600	2,000	1,590	369
7	580	146	304	715	1,140	220	260	75	550	1,800	1,520	670
8	500	114	289	580	1,020	340	200	280	600	2,200	2,180	1,080
9	580	304	87	500	965	380	190	110	550	2,600	2,270	760
10	500	404	304	500	965	400	150	170	750	2,400	2,270	860
11	500	670	289	460	910	440	220	160	600	2,200	2,180	860
12	910	230	151	386	860	400	220	180	600	1,900	1,830	860
13	670	352	151	965	860	550	220	200	550	1,500	2,180	1,200
14	500	320	216	1,080	760	340	170	360	600	1,200	3,170	1,020
15	441	230	189	860	715	360	240	360	550	1,500	2,460	860
16	500	259	138	1,260	625	440	260	400	600	1,960	1,910	760
17	540	259	352	1,140	670	420	240	380	500	3,060	1,670	670
18	441	289	259	860	670	280	360	400	600	3,170	1,260	625
19	386	151	244	715	670	440	260	340	600	3,060	1,260	500
20	386	304	259	1,830	670	340	180	550	550	2,560	1,020	404
21	441	164	230	1,380	540	280	280	700	750	2,360	1,260	404
22	176	103	202	1,200	500	280	440	1,100	850	2,860	1,140	500
23	336	320	87	1,080	500	280	240	950	1,200	2,860	1,080	670
24	320	126	352	965	500	240	100	750	1,200	2,460	810	810
25	320	422	230	860	500	240	220	850	1,100	2,180	860	580
26	289	500	202	1,140	460	180	150	850	1,000	1,910	860	580
27	202	289	259	1,080	500	420	180	1,100	900	1,830	860	369
28	230	320	244	1,200	441	400	170	1,100	750	1,910	1,080	320
29	164	244	289	1,590	404	320	360	......	700	2,090	910	336
30	336	289	103	2,660	500	300	70	......	700	2,360	810	176
31	289	320	......	5,170	......	280	65	......	700	......	715	......
Mean	534	261	256	1,070	900	353	231	446	742	2,190	1,630	629

NOTE.— Discharge, December 8 to April 16, estimated, because of ice or logs on the control, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of MOOSE RIVER AT MOOSE RIVER, for the year ended June 30, 1918

[Drainage area, 370 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	1,080	164	534	1.44	1.65
August	670	69	261	0.706	0.81
September	500	87	256	0.692	0.77
October	5,170	274	1,070	2.89	3.33
November	2,660	404	900	2.43	2.71
December	550	180	353	0.954	1.10
January	440	65	231	0.624	0.72
February	1,100	75	446	1.21	1.26
March	1,200	500	742	2.01	2.32
April	3,170	800	2,190	5.92	6.61
May	3,170	715	1,630	4.41	5.08
June	1,200	176	629	1.70	1.90
The year	5,170	65	770	2.08	28.27

MIDDLE BRANCH OF MOOSE RIVER AT OLD FORGE

Location.— About 300 feet below the highway bridge and 400 feet below the State dam in Old Forge, Herkimer county.

Drainage area.— 51.5 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— November 9, 1911, to June 30, 1918.

Gage.—Vertical staff on left bank, 300 feet below highway bridge. Gage read by Jacob Edick.

Discharge measurements.— Made by wading near the gage at low and medium stages and from the highway bridge at high stages.

Channel and control.— Channel, stone and gravel near the gage. Control is rock ledge about 200 feet below gage, practically permanent

Extremes of discharge.— Current year: Maximum stage recorded, 4.0 feet at 8 A. M. and 3:30 P. M., May 14; discharge, 530 second-feet. Minimum stage, 0.90 foot at 5 P. M., September 11; discharge, 21 second-feet.

1911–1917: Maximum stage recorded, 6.3 feet (stage-discharge relation affected by backwater from Moose river) on

March 28, 1913. Discharge, computed from records at dam, 760 second-feet.

Ice.— Stage-discharge relation not affected by ice.

Regulation.— Flow controlled at dam.

Accuracy.— Stage-discharge relation practically permanent between dates of shift. Probably affected by logs on the control during short periods in April, May and June. Not affected by ice. Rating curve well defined from 20 to 400 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying to the rating table mean daily gage heights weighted on days of changing gates, from records of gate opening at dam. Daily discharge for days when the stage-discharge relation was affected by logs ascertained from records of gate opening and head on the spillway at the dam. Results good, except for days when they are computed from records at the dam, when they are fair.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of MIDDLE BRANCH OF MOOSE RIVER AT OLD FORGE, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
July 18	C. C. Covert	1.68	38.5
Aug. 16	E. D. Burchard	1.17	23.6
Aug. 16	E. D. Burchard	1.50	61.1
Oct. 4	E. D. Burchard	1.81	97
Oct. 4	E. D. Burchard	2.20	149
Oct. 5	E. D. Burchard	2.42	182
Oct. 5	E. D. Burchard	1.39	36
Oct. 5	E. D. Burchard	1.32	36
1918			
April 11	M. H. Carson	2.40	137
April 11	E. D. Burchard	1.86	35
May 11	E. D. Burchard	3.39	382
May 11	J. W. Moulton	3.68	451
May 11	E. D. Burchard	3.79	193
May 11	J. W. Moulton	2.58	477
June 24	J. W. Moulton	1.20	28
June 24	J. W. Moulton	1.77	83
June 24	J. W. Moulton	2.33	163

Daily discharge, in second-feet, of MIDDLE BRANCH OF MOOSE RIVER AT OLD FORGE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	173	25	30	98	280	49	58	143	130	130	232	63
2	173	25	30	98	311	51	56	136	130	136	232	53
3	173	25	30	98	290	52	58	136	130	106	232	35
4	173	25	28	98	290	52	57	136	130	115	232	27
5	136	25	30	98	290	52	57	136	130	115	232	38
6	60	25	28	98	280	54	57	136	130	125	223	126
7	60	50	26	98	280	57	57	136	130	115	214	36
8	65	110	25	98	280	57	57	136	130	115	214	58
9	65	110	80	98	280	56	58	136	130	125	290	63
10	173	110	23	98	280	56	58	136	130	135	378	220
11	350	110	22	98	280	58	56	136	130	135	378	311
12	158	110	26	98	280	58	56	136	130	135	378	241
13	65	110	80	98	270	58	56	130	130	135	451	36
14	44	110	104	98	260	59	56	130	130	150	530	63
15	34	110	104	104	250	63	60	130	130	150	503	74
16	30	110	104	104	270	63	60	130	130	150	402	74
17	33	110	104	104	250	63	59	130	123	165	280	53
18	135	92	104	104	250	63	59	130	123	165	184	41
19	210	61	104	98	165	63	59	130	123	135	141	35
20	100	61	104	98	58	63	59	130	123	167	141	50
21	25	63	104	98	54	61	57	130	123	178	111	126
22	25	65	104	98	51	61	57	130	123	324	86	74
23	25	65	98	98	54	60	57	130	123	324	86	16
24	40	65	98	98	55	60	57	130	130	324	74	53
25	30	60	98	104	56	60	57	130	130	324	63	311
26	25	48	98	104	55	60	57	130	130	298	74	241
27	25	26	98	104	50	60	57	130	130	298	63	24
28	25	23	98	143	48	60	56	130	130	248	46	21
29	25	23	98	165	48	58	56	......	130	232	175	21
30	25	27	98	181	48	58	104	......	130	232	53	28
31	25	29	......	214	......	58	143	......	130	......	63	......
Mean	87.3	64.8	72.6	109	190	58.2	61.6	133	128	183	218	87.1

NOTE.— Discharge, July 11, 18 and 19, and September 1 to 3 and 5 to 8, estimated, because of ogs on the control, by study of gage-height graph.

Monthly discharge of MIDDLE BRANCH OF MOOSE RIVER AT OLD FORGE, for the year ended June 30, 1918

[Drainage area, 51.5 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	350	25	87.3	1.70	1.96
August	110	23	64.8	1.26	1.45
September	104	22	72.6	1.41	1.57
October	214	98	109	2.12	2.44
November	311	48	190	3.69	4.12
December	63	49	58.2	1.13	1.30
January	143	56	61.6	1.20	1.38
February	143	130	133	2.58	2.69
March	130	123	128	2.49	2.87
April	324	106	183	3.56	3.97
May	530	46	218	4.24	4.89
June	311	16	87.1	1.69	1.89
The year	530	16	116	2.25	30.53

BEAVER RIVER

East pond, at elevation about 1,956 feet, situated in the lake region of northern Hamilton county, may be said to be the headwaters of Beaver river. This pond is connected by a series of lakes, brooks and swamps with Beaver river flow, which is drained by Beaver river proper, all flowing in a general westerly direction. Razorback pond in Herkimer county is probably the highest body of water draining into Beaver river, being at elevation about 2,200.

From East pond to the junction of Beaver and Black rivers, about eight miles above Carthage, there is a total fall of about 1,200 feet in a distance of about 60 miles.

The principal tributary, Twitchell creek, having its source in Twitchell lake, near Big Moose lake, flows in a general northwesterly direction, emptying into Beaver river flow about 3½ miles above the State dam.

BEAVER RIVER AT STATE DAM, NEAR BEAVER RIVER

Location.— At the concrete storage dam, at the outlet of Beaver river flow, about 7½ miles west of Beaver River P. O., Herkimer county, and 7 miles above Beaver lake at Number Four.

Drainage area.— 176 miles square. (Measured on U. S. Geological Survey topographical maps.)

Records available.— May 11, 1908, to June 30, 1918.

Gages.— Elevation of water-surface in the reservoir is determined by a staff gage in two sections, on the west corner of the gate-house; read by James Dunbar. The mean elevation of the crest of the spillway is at gage height 16.96 feet.

Prior to September 28, 1913, elevation of water-surface was determined by measuring the distance from the water-surface to a reference point set at the elevation of the crest of the spillway.

Widths of sluice-gate openings determined by measuring on the gate stems the distance they have been raised.

Discharge measurements.— Current-meter measurements made from a temporary foot-bridge at the mouth of the outlet tunnel, below the gates. Discharge over the spillway has not been measured.

Determination of discharge.— Records include the discharge through one or more of four 4-foot circular sluice-gates, when opened, the discharge over the spillway and the discharge through the logway at the west end of the spillway.

The sluice-gates have been rated by current-meter measurements made at different lake elevations, but no measurements have been made of the discharge over the spillway or through the logway. Theoretic coefficients based on the Cornell Experiments * have been used to compute ratings for the spillway and logway.

Extremes of stage.— Current year: Maximum elevation of water-surface recorded in reservoir, 18.5 feet on April 4 and 5. Minimum stage recorded, 7.85 feet on February 13.

1908–1918: Maximum elevation of water-surface in reservoir, 19.46 feet on March 29, 1913. Minimum stage, 2.9 feet on September 29 and October 1, 1913.

Extremes of discharge.— Current year: Maximum daily discharge, 1,900 second-feet on April 5. Minimum discharge, zero during periods when gates were closed and there was no flow over the spillway.

Regulation.— At ordinary stages the discharge of Beaver river is completely regulated by the operation of the sluice-gates.

Accuracy.— The accuracy of these computations depends, to a large extent, on the care with which the gates were set to the recorded openings. For periods when the water was flowing over the spillway it also depends on the care with which the elevation of the water-surface in the reservoir was determined. Probably the estimates as a whole are fairly good.

Coöperation.— Gaging station maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

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*United States Geological Survey Water Supply paper 200.

Daily gage height, in feet, of Reservoir above State Dam, near Beaver River for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	17.65	17.26	14.6	10.9	17.1	16.45	13.7	9.8	12.5	17.5	17.95	17.8
2.....	17.6	17.2	14.7	10.75	17.4	16.4	13.55	9.7	12.8	17.75	18.0	17.7
3.....	17.6	17.2	14.6	10.6	17.4	16.3	13.4	9.25	13.0	18.2	18.0	17.7
4.....	17.55	17.2	14.5	10.5	17.5	16.35	13.2	9.0	13.1	18.5	18.0	17.7
5.....	17.5	17.1	14.4	11.0	17.45	16.3	13.0	8.9	13.4	18.5	17.95	17.7
6.....	17.55	16.95	14.35	11.2	17.45	16.2	12.9	8.8	13.65	18.4	17.9	17.7
7.....	17.4	16.9	14.3	11.2	17.4	16.1	12.8	8.7	13.8	18.2	17.85	17.75
8.....	17.4	16.8	14.2	11.2	17.4	16.0	12.7	8.6	13.9	18.2	17.8	17.85
9.....	17.4	16.8	14.1	11.4	17.25	15.9	12.55	8.5	14.0	18.2	17.9	17.85
10.....	17.4	16.75	13.95	11.6	17.25	15.85	12.5	8.1	14.2	18.2	18.0	17.9
11.....	17.4	16.7	13.8	11.75	17.25	15.8	12.4	8.0	14.25	18.1	18.1	17.9
12.....	17.4	16.5	13.65	11.9	17.2	15.7	12.3	7.9	14.3	17.9	18.2	18.0
13.....	17.4	16.4	13.55	12.3	17.1	15.65	12.15	7.85	14.4	17.85	18.3	18.0
14.....	17.4	16.3	13.4	12.3	17.05	15.5	12.0	7.9	14.5	17.85	18.4	18.0
15.....	17.4	16.15	13.3	12.3	17.0	15.45	11.8	8.15	14.55	17.7	18.4	18.05
16.....	17.35	16.0	13.15	12.3	17.0	15.3	11.7	8.2	14.6	17.8	18.3	17.9
17.....	17.35	15.9	13.0	12.3	17.0	15.2	11.6	8.4	14.6	18.0	18.25	17.8
18.....	17.3	15.8	12.9	12.5	16.9	15.1	11.5	8.45	14.6	18.1	18.0	17.7
19.....	17.3	15.7	12.8	12.7	16.9	15.1	11.4	8.5	14.6	18.1	17.9	17.7
20.....	17.3	15.6	12.6	13.0	16.9	15.0	11.3	9.2	14.4	18.0	17.9	17.7
21.....	17.3	15.5	12.4	13.4	16.9	14.9	11.2	9.55	14.2	18.0	17.95	17.6
22.....	17.3	15.3	12.3	14.0	16.9	14.85	11.1	9.8	15.0	18.1	18.0	17.6
23.....	17.3	15.2	12.2	14.2	16.9	14.8	11.0	10.0	15.1	18.1	17.9	17.5
24.....	17.35	15.1	12.05	14.4	16.9	14.7	10.8	10.5	15.4	18.1	17.85	17.55
25.....	17.35	15.05	11.9	14.6	16.9	14.55	10.6	10.9	15.7	18.1	17.9	17.5
26.....	17.4	15.0	11.8	14.8	16.9	14.4	10.45	11.6	16.1	18.0	17.9	17.45
27.....	17.4	14.9	11.65	15.0	16.85	14.3	10.3	11.9	16.3	17.9	17.9	17.42
28.....	17.4	14.8	11.55	15.3	16.70	14.2	10.2	12.2	16.5	17.8	18.0	17.4
29.....	17.35	14.7	11.3	15.6	16.6	14.1	10.1	......	16.8	17.8	18.0	17.38
30.....	17.3	14.65	11.1	16.0	16.5	13.9	10.0	......	17.0	17.85	17.9	17.35
31.....	17.3	14.6	......	16.9	......	13.85	9.9	......	17.2	......	17.8	......

Gate openings, in inches, at State Dam on Beaver River, near Beaver River, for the year ended June 30, 1918

DATE	Logway	GATE			
		1	2	3	4
		Inches	*Inches*	*Inches*	*Inches*
August 4 (4:00 P. M.) to August 10 (1:30 P. M.), inclusive.	.....	.....	.....	.....	30
August 10 (1:30 P. M.) to April 13 (9:30 A. M.), inclusive.	.....	.....	.....	.....	48
April 4 (8:00 A. M.) to April 9 (5:30 P. M.), inclusive....	Full				
April 10 (7:00 A. M. to 5:00 P. M.)....................	.....	48	.....	.....	......
April 13 (9:30 A. M.) to April 14 (6:00 A. M.)........	.....	.....	.....	.....	24
April 14 (6:00 A. M. to 6:00 P. M.)....................	.....	48	.....	.....	48
April 15 (6:00 A. M. to 6:00 P. M.)....................	.....	48	.....	.....	48
April 16 (6:00 A. M. to 6:00 P. M.)....................	.....	48	.....	.....	48
April 17 (6:00 A. M. to 5:00 P. M.)....................	.....	48	.....	.....	......
April 17 (6:00 A. M.) to April 24 (9 A. M.), inclusive...	.....	.....	.....	.....	48
April 24 (9:00 A. M.) to May 7 (4:00 P. M.), inclusive..	.....	.....	.....	.....	24

Monthly discharge of BEAVER RIVER AT STATE DAM, NEAR BEAVER RIVER, for the year ended June 30, 1918

[Drainage area, 176 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	412	139	211	1.20	1.38
August	256	83	221	1.26	1.45
September	243	213	231	1.31	1.46
October	259	200	228	1.30	1.50
November	536	253	328	1.86	2.08
December	252	238	246	1.40	1.61
January	237	199	219	1.24	1.43
February	224	166	188	1.07	1.11
March	238	227	245	1.39	1 60
April	1,900	536	1,100	6.22	6.94
May	1,260	552	846	4.80	5.53
June	835	173	475	2.70	3.01
The year	1,900	83	378	2.15	29.10

ST. LAWRENCE RIVER DRAINAGE BELOW LAKE ONTARIO

OSWEGATCHIE RIVER

DESCRIPTION

Oswegatchie river rises in Cranberry lake and the mountains to the southwest in St. Lawrence and Jefferson counties, whence it flows in a general northerly direction into the St. Lawrence river at Ogdensburg, where its drainage area is 1,609 square miles. The river is formed by the junction of the east branch of Oswegatchie river and the west branch of the Oswegatchie river at Talcville and its main tributary below this point is Indian river, which flows through Black lake. Considerable power is developed along all three of these main tributaries and many of the power sites in the lower reaches of the river have also been developed.

OSWEGATCHIE RIVER NEAR HEUVELTON

Location.— 2½ miles above Heuvelton, St. Lawrence county, 3 miles below Rensselaer Falls and 7 miles above the Indian river (outlet to Black lake).

Drainage area.— 961 square miles. (Measured on U. S. Geological Survey topographic maps and U. S. Geological Survey map of state of New York.)

Records available.— June 23, 1916, to June 30, 1918.

Gage.— Gurley 7-day water-stage recorder on the right bank, about 2½ miles above Heuvelton, installed September 16, 1916. Prior to this date gage height was determined by measuring the distance from a reference point to the water-surface. Recorder inspected by George Todd.

Channel and control.— Solid rock.

Extremes of discharge.— Current year: Maximum stage from water-stage recorder, 6.60 feet from midnight until 8 P. M., April 4; discharge, 9,220 second-feet. Minimum stage from water-stage recorder, 1.00 foot at 2 A. M., August 12; discharge, 365 second-feet.

1916–1918: Maximum stage from water-stage recorder, 7.6 feet from 9 A. M to 12 A. M., March 30, 1917; discharge, 11,700 second-feet. Minimum stage observed by measuring from reference point to water-surface, 0.44 foot several times in August and September, 1917; discharge not computed.

Ice.— Stage-discharge relation slightly affected by ice.

Regulation.— Some diurnal fluctuation due to mills at Rensselaer Falls and above. Seasonal flow regulated by storage in Cranberry lake.

Accuracy.— Stage-discharge relation permanent. Rating curve well defined between 400 and 15,000 second-feet. Stage-discharge relation affected by ice during a portion of the period from January to March. The operation of water-stage recorder satisfactory during the year. Daily discharge ascertained by applying mean daily gage height to rating table. Results good except for period when the stage-discharge relation was affected by ice, when results were fairly good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of OSWEGATCHIE RIVER NEAR HEUVELTON, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
		Feet	*Sec.-ft.*
1917			
July 16	C. C. Covert	1.43	681
Aug. 14	E. D Burchard	1.24	506
Aug. 14	E. D. Burchard	1.22	504
Sept. 27	E. D. Burchard	1.30	566
Sept. 28	E. D. Burchard	1.26	534
Dec. 20 *a*	J. W. Moulton	1.47	675
1918			
Jan. 12 *a*	E. D. Burchard	1.50	656
Feb. 14 *b*	J. W. Moulton	2.02	735
Mar. 16 *a*	J. W. Moulton	2.60	1,780
April 9	E. D. Burchard	4.46	4,830
June 7	M. H. Carson	1.95	1,180

a Measurement made through partial ice cover.
b Measurement made through complete ice cover.

Daily discharge, in second-feet, of OSWEGATCHIE RIVER NEAR HEUVELTON, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	918	592	746	513	3,700	1,060	650	500	4,800	6,450	1,480	1,600
2.....	1,060	562	800	560	3,780	1,530	600	600	4,000	7,890	1,520	1,590
3.....	1,160	485	900	620	3,700	1,410	500	500	3,400	8,990	1,700	1,490
4.....	1,040	420	900	690	3,210	1,190	500	500	3,000	9,220	2,180	1,290
5.....	1,000	446	890	770	2,750	1,040	550	460	2,600	8,990	2,320	1,230
6.....	918	513	890	870	2,320	956	550	700	2,600	8,100	2,180	1,140
7.....	827	499	845	938	2,040	872	550	600	2,200	6,850	1,910	1,110
8.....	746	485	782	881	1,700	755	500	380	1,910	5,480	1,720	1,470
9.....	678	472	818	909	1,470	600	550	420	1,780	4,830	1,630	2,320
10.....	630	459	719	966	1,360	592	550	550	1,650	4,560	1,780	2,530
11.....	630	446	638	1,020	1,240	694	480	550	1,650	4,380	2,040	2,530
12.....	694	426	638	1,080	1,100	654	650	500	1,650	4,040	2,390	2,460
13.....	800	485	615	1,060	1,080	615	650	600	1,650	3,870	3,780	2,460
14.....	755	485	600	1,100	985	678	600	700	1,590	3,870	4,650	2,750
15.....	694	492	615	1,240	881	800	600	1,000	1,650	3,960	6,050	2,980
16.....	686	478	570	1,410	809	764	650	1,800	1,910	3,620	5,860	2,900
17.....	702	485	592	1,410	809	719	650	2,000	1,840	3,370	5,480	2,390
18.....	737	478	520	1,400	800	702	650	2,200	2,040	3,370	4,040	1,970
19.....	737	541	534	1,360	881	686	600	2,600	2,600	3,370	3,530	1,660
20.....	694	548	520	1,540	1,000	662	550	4,000	3,450	2,820	2,900	1,330
21.....	764	492	492	2,020	985	670	480	4,400	5,100	2,750	2,530	1,130
22.....	630	478	506	2,180	1,080	881	550	4,200	6,650	2,980	2,460	1,040
23.....	578	485	......	2,180	1,310	995	650	4,000	7,680	2,980	2,460	966
24.....	646	459	......	1,980	1,410	1,040	650	3,800	7,890	2,820	2,250	918
25.....	622	485	......	2,320	1,360	1,040	600	3,200	7,890	2,600	2,040	1,000
26.....	630	592	......	2,530	1,210	938	600	4,000	7,470	2,390	1,840	1,100
27.....	608	881	......	2,600	1,060	976	600	5,000	6,850	2,180	1,780	1,040
28.....	570	890	506	2,600	956	918	460	5,000	6,250	1,910	1,720	928
29.....	555	800	520	2,460	881	900	420	......	5,670	1,730	1,840	863
30.....	555	719	513	2,530	809	800	420	......	5,480	1,570	1,840	800
31.....	555	728	......	3,290	......	750	480	......	5,480	......	1,730	......
Mean...	736	542	623	1,520	1,560	867	564	1,960	3,890	4,400	2,630	1,630

NOTE.— Mean discharge, September 23 to 27, inclusive, estimated, 500 second-feet. Discharge, December 28 to March 7, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of OSWEGATCHIE RIVER NEAR HEUVELTON, for the year ended June 30, 1918

[Drainage area, 961 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	1,160	555	736	0.766	0.88
August	890	420	542	0.564	0.65
September	900	492	623	0.645	0.72
October	3,290	513	1,520	1.58	1.82
November	3,780	800	1,560	1.62	1.81
December	1,530	592	867	0.902	1.04
January	650	420	564	0.588	0.68
February	5,000	380	1,960	2.04	2.12
March	7,890	1,590	3,890	4.04	4.66
April	9,220	1,570	4,400	4.58	5.11
May	6,050	1,480	2,630	2.74	3.16
June	2,980	800	1,630	1.70	1.90
The year	9,220	380	1,740	1.81	24.55

EAST BRANCH OF OSWEGATCHIE RIVER AT NEWTON FALLS

Location.— 600 feet below the lower dam of the Newton Falls Paper Company in the village of Newton Falls, St. Lawrence county, 4 miles above the mouth of Little river and 10 below the outlet of Cranberry lake.

Drainage area.— 166 square miles. (Measured by engineers of the New York State Conservation Commission.)

Records available.— October 6, 1912, to June 30, 1918.

Gage.— Vertical staff on left bank about 600 feet below the lower dam; read by Henry Van Waldick.

Discharge measurements.— Made by wading at low stages and from a cable 30 feet above gage at high stages.

Channel and control.— Small boulders and rock, covered with waste from the pulp-mill; probably permanent.

Extremes of discharge.— Current year: Maximum stage recorded, 4.53 feet at 5:10 P. M., May 16; discharge, 1,240 second-feet.

1912–1918: Maximum stage recorded, 6.1 feet at 5:15 P. M., March 28, 1913; discharge, 2,200 second-feet.

Ice.— Stage-discharge relation affected by ice only for short period during extremely cold weather.

Regulation.— Some diurnal fluctuation in flow caused by the paper-mills. Seasonal flow largely controlled by storage at Cranberry lake.

Accuracy.— Stage-discharge relation practically permanent. Not affected by ice during year. Rating curve well defined between 20 and 1,200 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying to the rating table weighted mean gage heights based on observer's notes concerning operation of paper-mills. Results good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of OSWEGATCHIE RIVER AT NEWTON FALLS, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1918		*Feet*	*Sec.-ft.*
Feb. 12 *a*	J. W. Moulton	2.68	399
April 7	E. D. Burchard	1.31	168
April 7	E. D. Burchard	0.85	94
April 7	E. D. Burchard	1.05	117
June 25	J. W. Moulton	2.78	508
June 25	J. W. Moulton	2.66	473
June 25	J. W. Moulton	2.42	412

a Measurement made through partial ice cover.

Daily discharge, in second-feet, of EAST BRANCH OF OSWEGATCHIE RIVER AT NEWTON FALLS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	150	180	350	148	350	363	22	363	430	460	622	416
2	262	304	210	363	315	180	363	363	430	588	810	242
3	304	188	402	338	223	214	376	22	22	460	1,030	416
4	188	490	376	338	22	272	326	416	460	506	1,030	402
5	180	196	350	315	338	272	338	416	430	522	538	445
6	180	196	304	350	338	232	22	402	460	416	852	326
7	188	188	304	22	252	252	338	45	445	152	506	389
8	100	376	326	430	188	232	350	402	326	522	506	416
9	196	376	200	402	293	232	338	416	293	490	506	304
10	223	350	262	389	163	658	338	22	22	460	571	588
11	223	376	376	376	180	852	315	430	430	416	604	894
12	242	200	304	350	223	214	315	416	460	430	554	852
13	196	350	282	376	205	223	22	430	445	402	894	1,120
14	205	350	205	171	223	196	326	193	430	144	938	1,120
15	119	304	262	376	252	445	338	460	416	460	1,220	1,070
16	402	350	205	350	252	22	315	445	430	506	1,220	588
17	223	304	402	338	242	554	326	22	22	554	1,070	810
18	188	304	402	282	232	363	315	460	338	554	938	554
19	171	326	402	315	350	283	326	445	445	389	770	430
20	180	402	402	338	304	389	350	460	350	363	770	402
21	223	262	402	326	293	338	338	430	445	20	588	293
22	188	180	402	293	272	363	338	460	490	522	522	242
23	171	223	300	363	293	87	350	460	430	445	522	302
24	262	376	430	272	304	350	363	22	152	402	490	350
25	302	350	350	262	205	363	350	475	430	506	490	326
26	402	205	402	262	223	376	350	430	338	389	282	304
27	402	460	304	272	223	522	22	445	445	376	588	326
28	376	402	350	22	376	363	350	460	460	20	460	315
29	200	304	304	75	283	338	304	......	445	152	490	304
30	304	320	304	272	363	99	252	......	460	350	522	293
31	350	304	......	262	......	163	252	......	202	......	475	......
Mean	235	307	329	292	259	316	291	350	367	399	692	491

NOTE.— Stage-discharge relation not affected by ice. Discharge for the following days estimated, because of no gage-height records: July 1, 8 and 29, August 12, September 2, 9 and 23, February 3, 10, 17 and 24, March 3, 10 and 17, and April 21 and 28.

Monthly discharge of EAST BRANCH OF OSWEGATCHIE RIVER AT NEWTON FALLS, for the year ended June 30, 1918

[Drainage area, 166 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	402	100	235	1.42	1.64
August	460	180	307	1.85	....
September	430	200	329	1.98	2.21
October	430	22	292	1.76	2.03
November	376	22	259	1.56	1.74
December	852	22	316	1.90	2.19
January	376	22	291	1.75	2.02
February	475	22	350	2.11	2.20
March	490	22	367	2.21	2.55
April	554	20	399	2.40	2.68
May	1,220	282	692	4.17	4.81
June	1,120	202	491	2.96	3.30
The year	1,220	20	361	2.17	29.50

WEST BRANCH OF OSWEGATCHIE RIVER NEAR HARRISVILLE

Location.— At the highway bridge near Geers Corners, about 2½ miles downstream from Harrisville, Lewis county.

Drainage area.— 245 square miles. (Measured on U. S. Geological Survey topographic maps and U. S. Geological Survey map of the state of New York.)

Records available.— July 1, 1916, to June 30, 1918.

Gage.— Vertical staff in three sections on the right bank. One section, reading from 0.0 to 3.3 feet, about 25 feet below bridge, two sections, graduated from 3.3. to 10.1 feet, on downstream side of bridge abutment; read by Frank Osborne.

Discharge measurements.— Made from a cable about 200 feet above the bridge or by wading.

Channel and control.— Rocky and rough; probably permanent.

Extremes of discharge.— Current year: Maximum stage recorded, 7.4 feet at 6 P. M., April 3; discharge, 3,980 second-feet. Minimum stage recorded, 1.1 feet at 6 P. M., August 11; discharge, 42 second-feet.

1916–1918: Maximum stage recorded, 8.1 feet at 6:30 A. M. and 6 P. M., March 28, 1917; discharge, 4,880 second-feet. Minimum stage recorded, 1.1 feet at 6 P. M., August 11, 1917; discharge, 42 second-feet.

Ice.— Stage-discharge relation probably not affected by ice.

Regulation.— The pulp-mill at Harrisville causes some diurnal fluctuation in discharge.

Accuracy.— Stage-discharge relation practically permanent. Not affected by ice. Rating curve well defined between 50 and 4,000 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of WEST BRANCH OF OSWEGATCHIE RIVER NEAR HARRISVILLE, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1918		*Feet*	*Sec.-ft.*
Feb. 12	J. W. Moulton	1.99	165
April 8	E. D. Burchard	4.88	1,580
June 26	J. W. Moulton	2.63	339

Daily discharge, in second-feet, of WEST BRANCH OF OSWEGATCHIE RIVER NEAR HARRISVILLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	480	85	370	158	1,960	305	106	106	1,560	1,800	560	490
2	422	85	370	245	1,640	335	115	91	1,210	2,890	650	422
3	370	85	352	220	1,350	305	106	106	1,090	3,980	650	405
4	260	64	352	275	1,090	245	106	106	970	3,300	600	352
5	232	79	245	335	850	232	91	98	800	2,690	600	320
6	195	62	195	405	650	220	68	91	750	2,130	560	275
7	146	50	245	388	560	245	77	106	650	1,640	520	520
8	170	50	220	460	422	170	85	91	560	1,560	600	1,090
9	124	51	170	480	405	158	77	85	480	1,640	600	1,210
10	146	70	170	480	370	170	79	77	480	1,800	560	1,030
11	146	91	170	405	352	170	91	115	440	1,640	650	910
12	195	56	158	305	370	170	124	124	370	1,420	800	850
13	275	124	146	370	335	158	98	146	405	1,280	1,150	970
14	220	70	106	520	275	170	79	220	370	1,210	1,720	1,090
15	170	78	85	560	220	170	158	440	370	1,210	1,800	970
16	182	58	91	560	220	195	115	480	370	1,210	1,490	750
17	158	74	74	480	260	182	106	480	370	1,350	1,210	650
18	170	62	106	520	275	207	106	560	405	1,350	1,030	520
19	208	63	106	520	305	158	115	650	440	1,350	850	440
20	208	64	106	750	405	170	106	1,210	600	1,210	750	352
21	232	91	79	970	370	195	124	1,490	850	1,090	700	390
22	182	79	98	1,030	405	207	98	1,350	1,350	1,090	650	338
23	208	66	106	850	460	195	124	1,350	1,800	1,150	560	422
24	195	85	70	750	440	195	146	1,210	1,960	1,090	480	490
25	124	440	79	850	370	195	124	1,210	1,960	970	440	422
26	146	388	77	1,090	335	207	124	1,800	1,960	910	460	335
27	170	275	91	1,090	335	260	124	1,800	1,640	800	560	305
28	124	232	60	910	305	195	98	1,720	1,350	700	650	245
29	124	170	91	700	275	170	79	......	1,280	650	700	275
30	91	220	146	850	290	170	98	......	1,280	600	650	245
31	62	352	......	1,420	......	115	106	......	1,420	......	560	......
Mean	198	123	158	611	530	201	105	618	953	1,520	766	568

Monthly discharge of WEST BRANCH OF OSWEGATCHIE RIVER NEAR HARRISVILLE, for the year ended June 30, 1918
[Drainage area, 245 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	480	62	198	0.808	0.93
August	440	50	123	0.502	0.58
September	370	60	158	0.645	0.72
October	1,420	158	611	2.50	2.88
November	1,960	220	530	2.16	2.41
December	335	115	201	0.820	0.95
January	158	68	105	0.429	0.38
February	1,800	77	618	2.52	2.62
March	1,960	370	953	3.89	4.48
April	3,980	600	1,520	6.22	6.94
May	1,800	440	766	3.13	3.61
June	1,210	245	568	2.32	2.59
The year	3,980	50	527	2.15	29.09

RAQUETTE RIVER

DESCRIPTION

Raquette river rises in northern Hamilton county, flows almost north through a long narrow valley to St. Lawrence river. Its total length from its source to its confluence with the St. Lawrence, near the most northern point of the state, is 162 miles. The drainage area at the mouth of the river is 1,269 square miles.

Its source is on an elevated plateau about 1,600 feet above sea-level. The upper part of the basin includes many acres of swamp land, as well as a large area of lakes and ponds, including Tupper lake, Little Tupper lake, Long lake, Round lake, Blue Mountain lake, Forked lake and Raquette lake.

The high region receives a heavy rainfall, the mean annual amounting to about 48 inches, or about 10 inches above the mean for the state.

The course of the river through the mountains is marked by many falls and rapids, but as yet only 400 feet of the 1,400 feet of fall in the river below Tupper lake has been developed. The river is characterized by tremendous fluctuations between the maximum and minimum flow and is in great need of artificial regulation, if the possibilities of power development are to be fully realized.

RAQUETTE RIVER AT PIERCEFIELD

Location.— One-half mile below the dam of the International Paper Company at Piercefield, St. Lawrence county, and about ¾ mile above head of Black rapids.

Drainage area.— 723 square miles. (All but 16 square miles measured on U. S. Geological Survey topographic maps.)

Records available.— August 20, 1908, to June 30, 1918.

Gage.— Stevens water-stage recorder in a galvanized sheet-iron house over a concrete well, connected with the river by a 4-inch cast-iron pipe, located on the right bank about ½ mile below dam. Prior to January 1, 1913, the following gages were used: August 20, 1908, to September 3, 1910, vertical staff fastened to an old pine stump; September 4 to December 31, 1910, chain gage fastened to same stump and having the same datum; June 1, 1911, datum of the chain gage lowered 2 feet. Water-stage recorder was set at this datum. Recorder inspected by M. O. Wood.

Discharge measurements.— Made from a cable ¾ mile below gage — just above Black rapids.

Channel and control.— Channel opposite gage is a deep pond with no perceptible velocity. Control point is at head of Black rapids.

Extremes of discharge.— Current year: Maximum stage from water-stage recorder, 10.60 feet at 1 P. M., April 2; discharge, 5,990 second-feet. Minimum stage from water-stage recorder, 1.80 feet at 3 P. M., January 20; discharge, 56 second-feet.

1908–1918: Maximum stage from water-stage recorder, 11.68 feet at 3 A. M., April 1, 1913; discharge, 7,100 second-feet. Minimum stage from water-stage recorder, 0.85 foot at 11 A. M., September 2, 1913; discharge, about 10 second-feet.

Ice.— Rapids that form control rarely freeze and measurements when the pond was covered with ice indicate that the stage-discharge relation is not often affected.

Regulation.— Large diurnal fluctuation in flow caused by dam during low and medium stages. Numerous lakes in the upper part of the drainage afford considerable storage, most of which is so controlled that the effect on the seasonal distribution of flow is large.

Accuracy.— Stage-discharge relation practically permanent.

Not affected by ice. Rating curve well defined between 50 and 7,000 second-feet. Operation of the water-stage recorder satisfactory throughout the year. Daily discharge ascertained by discharge integration. Results good.

Coöperation.— Station establishment and maintained by the United States Geological Survey in coöperation with the State Conservation Commission. Water-stage recorder inspected by an employee of the International Paper Company.

Discharge measurements of RAQUETTE RIVER AT PIERCEFIELD, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
July 27	C. C. Covert	5.40	986
Oct. 4	E. D. Burchard	4.05	475
1918			
Feb. 7 [a]	J. W. Moulton	4.21	370
Mar. 12	J. W. Moulton	6.08	1,480
May 10	J. W. Moulton	8.50	3,552

[a] Measurement made through partial ice cover.

Daily discharge, in second-feet, of RAQUETTE RIVER AT PIERCEFIELD, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	2,350	486	524	318	1,800	1,070	620	300	915	1,900	3,900	1,980
2	2,300	485	284	480	1,930	676	450	275	950	3,290	3,850	1,750
3	2,260	522	101	485	1,980	1,000	440	140	490	2,980	3,870	1,960
4	1,740	492	383	496	2,020	1,000	470	70	975	3,280	3,900	2,070
5	2,110	235	516	484	2,310	887	550	450	1,070	3,610	3,840	1,970
6	2,060	416	520	480	2,240	654	144	550	1,200	3,740	3,880	1,870
7	1,890	542	510	226	2,180	668	210	460	1,110	3,820	3,830	1,970
8	1,570	532	525	369	2,140	696	254	209	1,100	3,850	3,800	1,990
9	1,760	480	236	510	2,030	436	315	245	1,180	4,050	3,510	1,690
10	1,530	354	349	480	1,950	778	410	200	620	4,150	3,550	2,090
11	1,480	337	500	484	1,680	914	440	105	1,200	4,180	3,650	2,010
12	1,460	194	481	502	1,870	708	450	338	1,180	4,170	3,500	2,160
13	1,420	276	465	519	1,770	556	204	522	1,170	4,120	3,840	2,200
14	1,390	366	334	238	1,730	538	301	535	1,120	4,010	3,780	2,150
15	920	370	325	425	1,680	734	366	520	1,200	3,910	3,750	2,130
16	1,330	353	186	564	1,630	420	130	450	1,230	3,920	3,740	1,860
17	1,260	363	291	758	1,530	680	254	246	460	3,880	3,630	2,150
18	1,060	370	498	978	1,270	800	448	250	1,000	3,970	3,680	2,060
19	944	224	490	959	1,470	620	448	518	1,230	4,020	3,470	1,990
20	655	293	475	1,000	1,550	520	180	540	1,140	3,930	3,430	1,950
21	534	372	508	387	1,590	510	297	575	1,120	4,170	3,800	1,850
22	516	368	496	810	1,550	650	356	700	1,130	4,180	3,170	1,480
23	368	430	257	1,310	1,490	271	196	935	1,140	4,400	3,050	1,830
24	535	525	337	1,350	1,330	577	344	365	655	4,300	2,840	1,520
25	535	570	518	1,480	812	277	408	638	1,830	4,220	2,900	1,440
26	510	260	503	1,440	1,180	464	283	810	1,550	4,290	2,450	1,270
27	524	280	500	1,460	884	579	190	810	1,540	4,200	2,720	1,170
28	538	496	492	1,070	1,220	580	86	920	1,560	4,060	2,440	1,230
29	274	530	487	1,570	1,240	580	398	......	1,850	4,000	2,150	1,340
30	407	522	230	1,630	1,120	320	450	......	1,640	3,880	2,000	754
31	510	520	......	1,730	......	520	431	......	1,380	......	1,970	......
Mean	1,180	408	409	800	1,640	635	343	453	1,130	3,880	3,340	1,780

NOTE.— Discharge, January 20 to February 11, somewhat uncertain, on account of possible ice on the control; determined from open-water rating.

Monthly discharge of RAQUETTE RIVER AT PIERCEFIELD, for the year ended June 30, 1918

[Drainage area, 723 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on area drainage
July	2,350	*a* 274	1,180	1.63	1.89
August	570	*a* 194	408	0.565	0.65
September	525	*a* 101	409	0.566	0.63
October	1,730	*a* 226	800	1.11	1.28
November	2,310	*a* 812	1,640	2.27	2.53
December	1,000	*a* 271	635	0.878	1.01
January	620	86	343	0.475	0.55
February	935	70	453	0.627	0.65
March	1,640	*a* 460	1,130	1.56	1.80
April	4,400	1,900	3,880	5.37	5.99
May	3,900	1,970	3,340	4.62	5.33
June	2,200	*a* 754	1,780	2.46	2.74
The year	4,400	70	1,330	1.84	25.05

a Sunday.

ST. REGIS RIVER

DESCRIPTION

St. Regis river has its source in several small streams and lakes in the western part of Franklin county at an elevation of about 1,500 feet above the sea. It first flows in a northwesterly direction for about 40 miles and then somewhat east of north for about 28 miles to its mouth, in the St. Lawrence river near the state line. Its drainage area comprises 664 square miles (State Water Supply Commission).

The upper portion of its watershed consists of swamp and of mountains, from which most of the forest has been cut. Upon leaving the plateau the stream descends for 10 or 15 miles through a rugged country by a succession of steep rapids and precipitous falls to the lowlands bordering the St. Lawrence. Only a few of the excellent opportunities for developing power in the descent have as yet been utilized. From the foot of the hills to the St. Lawrence, the slope of the river is moderate and rock outcrop not frequent, consequently favorable sites for power-plants are scarce.

ST. REGIS RIVER AT BRASHER CENTER

Location.— Near the steel highway bridge in the village of Brasher Center, St. Lawrence county, 5 miles downstream from Brasher Falls, 6¼ miles below junction of east and west branches of St. Regis river and about 12 miles above the mouth.

Drainage area.— 621 square miles. (Measured on post-route map.)

Records available.— August 22, 1910, to November 10, 1917, when the station was discontinued.

Gages.— Staff, with inclined and vertical sections, on right bank about 600 feet above bridge. Installed June 24, 1916. Prior to this date, chain on right end, downstream side of highway bridge; read by George Myers.

Discharge measurements.— Made from a cable at the staff gage, installed in June, 1916. Previously made from the highway bridge or by wading.

Channel and control.— Small boulders and coarse gravel at cable; large boulders and gravel, very rough, at bridge. Both fairly permanent.

Extremes of discharge.— Current year. Maximum stage recorded, 7.5 feet at 5 P. M., October 31; discharge, 2,030 second-feet. Minimum stage recorded, 5.25 feet at 5 P. M., August 8; discharge, 34 second-feet.

1910–1918: Maximum stage recorded, 9.1 feet at 7 A. M., March 27, 1914; discharge, 16,200 second-feet. Minimum stage recorded, 525 feet at 5 P. M., August 8, 1917; discharge, 34 second feet.

Ice.— Stage-discharge relation seriously affected by ice.

Accuracy.— Stage-discharge relation practically permanent. Affected by ice during a large portion of the period from December to March, inclusive. Gage read to quarter-tenths daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good except for periods when the stage-discharge relation was affected by ice, when results were fairly good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements at ST. REGIS RIVER AT BRASHER CENTER, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Sept. 1	C. C. Covert	6.27	473
Oct. 2	J. W. Moulton	6.20	441
Oct. 2	E. D. Burchard	6.21	442
1918			
Mar. 17 *a*	J. W. Moulton	6.67	545
April 10	E. D. Burchard	8.33	3,400

a Measurement made through partial ice cover.

Daily discharge, in second-feet, of ST. REGIS RIVER AT BRASHER CENTER, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	DAY	July	Aug.	Sept.	Oct.	Nov.
1	870	100	675	404	1,880	16	456	372	232	810	......
2	930	55	645	510	1,520	17	492	456	202	705	......
3	810	50	758	529	1,240	18	456	348	158	605	......
4	645	50	685	586	1,050	19	372	254	170	625	......
5	567	44	492	655	930	20	388	372	242	990	......
6	492	61	492	810	810	21	586	456	291	990	......
7	456	50	340	980	705	22	474	548	456	930	......
8	492	37	291	810	625	23	372	645	520	930	......
9	474	50	319	705	529	24	404	548	388	810	......
10	456	75	372	685	438	25	319	456	270	1,120	......
11	348	130	404	625	......	26	270	348	232	1,380	......
12	520	202	348	625	......	27	270	291	319	1,310	......
13	645	158	348	685	......	28	319	372	291	1,180	......
14	492	121	291	705	......	29	254	319	372	1,240	......
15	492	215	270	930	......	30	202	348	404	1,590	......
						31	158	548	......	1,960	......
						Mean	467	261	376	883	......

NOTE.— Station discontinued November 10, 1917.

Monthly discharge of ST. REGIS RIVER AT BRASHER CENTRE, for the year ended June 30, 1918

[Drainage area, 621 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	930	158	467	0.752	0.87
August	645	37	261	0.420	0.48
September	758	158	376	0.605	0.68
October	1,960	404	883	1.42	1.64

LAKE CHAMPLAIN DRAINAGE BASIN

DESCRIPTION OF BASIN

Lake Champlain occupies a long and narrow valley, extending in a north-south direction and forming a part of the boundary between New York and Vermont.

Drainage areas tributary to LAKE CHAMPLAIN *

LOCALITY	Area in Square Miles		
	Place to place	Sub-total	Total
Pike river and adjacent area in Canada		*a* 242.00	
Missisquoi river in Canada		*b* 245.00	
Land area in Canada above outlet			487.00
Missisquoi river in Vermont		*b* 615.00	
(Total Missisquoi river, 860 square miles.)			
Lamoille river		*b* 725.00	
Winooski river		*b* 995.00	
Otter creek		*b* 935.00	
Eastern coast drainage		*b* 534.40	
Mettawee, Poultney and Castleton rivers in Vermont		*c* 376.00	
Land area in Vermont, except islands			4,180.40
Wood creek above Smith's Basin	18.60		
Big creek (Washington Co.) above junction with Wood creek	35.16	53.76	
Wood creek, Smith's Basin to Fort Ann	9.90	63.66	
Halfway creek above Kane's falls	78.82		
Halfway creek, Kane's falls to junction with Wood creek at Fort Ann	6.69	85.51	
Wood creek at Fort Ann, including Halfway creek		149.17	
Wood creek, Fort Ann to junction with Mettawee	55.73	204.90	
Mettawee river in Vermont	151.90		
Mettawee river in New York	55.70		
Total, Mettawee river		207.60	
Total, Wood creek and Mettawee river at junction		412.50	
Wood creek, junction Mettawee river to Whitehall	13.65	426.15	
Wood creek, Whitehall to junction with Poultney river	1.65	427.80	
Castleton river, in Vermont	100.90		
Poultney river, including Castleton river in Vermont		254.80	
Poultney river in New York		11.00	
Poultney river, total to junction with Wood creek		265.80	
Total, Wood creek and Poultney river at junction			693.60
Wood creek, Mettawee and Poultney rivers in New York		286.90	
Lake George outlet		220.10	
Bouquet river		*c* 208.10	
Ausable river		*d* 521.30	
Little Ausable river		*d* 75.10	
Saranac river		*d* 629.60	
Little Chazy river		*c* 63.80	
Big Chazy river		*d* 299.40	
Western coast drainage		*d* 344.60	
Land area in New York, except islands			2,708.90
Islands in New York		*e* 55.20	
Total land area above outlet			7,431.50
Water-surface in Canada		*e* 16.50	
Water-surface in United States		*e* 419.10	
Total water-surface		435.60	
Total drainage area above outlet			7,867.10
Richelieu river, Rouses Point to Chambly	*a* 310.00		
Total drainage area above Chambly			8,177.10
Richelieu river, Chambly to mouth	*a* 626.30		
Richelieu river, total		936.30	
Total drainage area above mouth			8,803.40

* Table here presented is a revision of that appearing in the 1907 report. *a* From maps of Canadian Geological Survey. Scale: 1 inch = 4 miles. *b* United States post-route maps. Scale: 1 inch = 12.5 miles. *c* Topographic maps of U. S. G. S. Scale: 1 inch = 1 mile (nearly). *d* Bien's Atlas of New York. Scale: 1 inch = 2.5 miles. *e* Charts of U. S. Coast and Geodetic Survey. Scale: 1:40,000.

The drainage basin is irregular in form, being about seventy-five miles wide from a point opposite Middlebury, Vt., northward to the outlet of the lake at Rouses Point, on the international boundary. South of Middlebury the average width of the basin is about thirty-five miles and the lake itself is very narrow, forming virtually a drowned river.

The tributary region is rugged and mountainous, mostly covered with forest and with little depth of soil except in the stream valleys. The drainage is received almost entirely through large tributaries, there being little direct coast drainage into the lake. The outlet of the lake is Richelieu river, which flows northward from Rouses Point to St. Lawrence river. The land drainage area above Rouses Point is 7,431 square miles. The water-surface of the lake is 436 square miles, making the total area at the foot of the lake 7,867 square miles.

The fluctuation of the lake surface has an extreme range of nearly ten feet.

LAKE CHAMPLAIN

Records showing the water-surface of Lake Champlain are kept at Fort Montgomery and Burlington by the United States Government and at Whitehall by the State of New York. The Government elevations are referred to mean sea-level at Sandy Hook, while the State elevations, Barge canal datum, are referred to mean tide at New York, which is taken as 14.73 feet below the Greenbush bench-mark. The relation between the two sets of elevations in this region is shown by the following determinations of the elevation of the old bench-mark at Whitehall, described as, "U. S. D. W. B. M., on coping of lock No. 23, between ends of anchor, N. W. gate, marked (cross in circle) U. S., with chisel," which is New York State Canal B. M. No. 130 and United States Coast and Geodetic Survey B. M. No. 36.

	Feet
Elevation (New York State Barge canal datum)....	104.375
Elevation (United States Coast and Geodetic Survey datum)	103.565
Difference	0.81

Therefore, to convert elevations in this region given by the United States Coast and Geodetic Survey or by the United States Engineers (War Department), referred to mean sea-level, to elevations referred to Barge canal datum, add 0.81 foot. It is to be noted that the similar relation at Albany is 0.87 foot.

LAKE CHAMPLAIN AT WHITEHALL

A gage has been maintained by this Department in the mouth of Wood creek below the dam at Whitehall since January 22, 1905. This gage gives a record of the fluctuation in level of water in this arm of Lake Champlain, which, however, is considerably affected by Wood creek discharges.

The original gage was attached to the face of the Champlain silk-mill on the right side of the stream below the dam. A standard Type A gage, No. 126, secured to the upper end of the lower east gate recess and having a range of 4 feet, between elevation 93.0 and 97.0, was superseded on December 20, 1917, by a standard Type A gage, in two sections. The lower section, having a range of 8 feet, between elevations 93.0 and 101.0, is secured to the north face of the lower west approach wall. A standard bench-mark plug is set in the wall near this section at elevation 100.0 (B. C. datum). The upper section, having a range of 4 feet, between elevations 101.0 and 105.0, is secured to the north face of the lower east thrust wall. A standard bench-mark plug is set near this section at elevation 104.0 (B. C. datum).

The gage is read twice daily — morning and afternoon — to tenths, with occasional readings to half-tenths.

This record was published as "Wood creek below Dam at Whitehall" previous to 1914.

Daily elevation of water-surface (B. C. datum) of LAKE CHAMPLAIN AT WHITEHALL for the year ended June 30, 1918. W. J. Berry, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	97.40	95.90	95.18	94.95	96.72	95.80	95.18	94.48	96.55	98.80	99.80	97.80
2	97.20	96.10	95.05	94.70	96.62	96.00	95.10	94.90	96.30	99.45	99.42	97.82
3	97.35	96.15	95.50	94.60	96.70	95.90	95.18	94.85	96.45	100.05	99.68	97.72
4	97.40	96.20	95.35	94.80	97.20	95.82	95.15	94.95	96.20	100.15	99.70	97.88
5	97.25	96.10	95.45	94.75	96.70	95.75	95.08	94.90	96.45	100.25	99.30	97.80
6	97.25	95.85	95.05	95.05	96.60	95.82	95.05	94.90	96.40	100.05	99.15	97.50
7	97.25	96.05	95.45	95.80	97.05	95.80	95.00	94.98	96.40	100.02	99.92	97.25
8	97.10	95.70	95.25	94.85	96.55	95.92	94.95	94.95	96.28	100.02	98.98	97.60
9	97.10	95.70	95.10	95.15	96.45	95.45	94.48	94.85	96.40	100.85	99.05	97.40
10	97.05	95.80	95.10	95.30	96.75	95.30	94.95	95.00	96.58	101.10	98.48	97.50
11	96.90	95.75	95.25	95.05	96.42	95.65	94.48	94.85	96.40	100.38	99.18	97.25
12	96.65	95.80	95.00	94.90	96.70	95.60	94.95	94.95	96.35	100.45	98.70	97.68
13	96.65	95.70	95.00	94.65	96.35	95.45	94.85	95.10	96.50	100.35	98.82	97.42
14	96.65	95.60	94.95	94.75	96.30	95.90	94.90	94.90	96.55	99.52	99.50	97.50
15	96.65	95.45	95.00	94.50	96.35	95.62	95.12	95.00	96.60	100.12	99.18	97.52
16	96.75	95.45	95.15	95.00	96.60	95.60	95.00	95.10	96.40	100.25	98.70	97.12
17	96.55	95.45	95.15	95.35	96.28	95.60	95.00	95.15	96.35	100.18	98.78	97.38
18	96.45	95.60	95.20	94.85	96.05	95.55	95.00	95.00	96.68	100.60	98.60	97.20
19	96.40	95.60	94.70	94.90	96.28	95.40	95.00	94.88	97.05	100.40	98.50	97.62
20	96.50	95.45	94.95	95.05	96.15	95.35	95.05	96.20	97.50	100.05	98.32	97.20
21	96.40	96.05	95.15	95.30	96.20	95.35	95.00	96.15	98.48	99.90	98.80	96.68
22	96.45	95.60	95.50	95.15	96.02	95.55	94.90	96.68	99.42	99.90	98.40	97.00
23	96.55	95.70	94.95	95.25	96.38	95.55	94.95	96.45	100.02	99.98	98.58	97.40
24	96.60	95.55	94.95	95.55	96.25	95.35	94.95	95.40	99.38	99.90	98.30	97.02
25	96.55	95.42	94.90	95.40	96.05	95.45	94.92	95.55	99.00	100.20	98.18	97.00
26	96.15	95.50	94.85	95.30	96.42	95.38	95.02	97.30	98.92	100.05	98.25	96.90
27	96.55	95.30	94.95	95.25	96.20	95.30	95.02	97.55	98.45	99.80	98.02	96.90
28	96.35	95.25	95.05	95.10	95.90	95.10	95.00	97.00	98.32	99.62	98.20	96.40
29	96.25	95.50	94.65	95.75	95.95	95.30	94.42	......	98.45	99.52	98.00	96.48
30	96.15	95.50	94.75	97.00	95.70	95.20	94.92	......	98.58	99.48	97.80	96.55
31	96.15	95.40	......	97.15	......	95.30	94.48	......	98.75	......	97.55	......

LAKE CHAMPLAIN AT BURLINGTON, VT.

Location.— On south side of roadway leading to dock of Champlain Transportation Co., at foot of King street, Burlington, Vt.

Records available.— May, 1907, to June 30, 1918.

Gage.— Staff; read once daily. Comparisons of gage readings indicate that zero of gage at Burlington is at practically the same elevation as that of gage at Fort Montgomery — 92.50 feet above mean sea-level (Elev. 93.31 B. C. datum).

Extremes of stage.— Current year: Maximum stage recorded. 6.78 feet on April 10 and 11. Minimum stage recorded, 1.46 foot, September 27, 28 and 29.

1907–1918: Maximum stage recorded, 8.20 feet on April 7, 1913. Minimum stage recorded, 0.25 foot on December 4, 1908.

Coöperation.— Gage heights furnished through the courtesy of Mr. D. A. Loomis, general manager of the Champlain Transportation Company to the United States Geological Survey.

Daily gage height, in feet, of Lake Champlain at Burlington, Vermont, for the year ended June 30, 1918

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1......	......	2.80	1.96	1.48	3.10	2.38	......	......	2.68	5.30	6.14	4.48
2......	4.00	2.74	......	1.50	3.18	......	......	......	2.68	5.65	6.10	......
3......	3.98	2.70	1.85	1.52	3.20	2.35	......	......	......	6.14	6.04	......
4......	3.98	2.65	1.85	1.56	......	2.33	......	......	......	6.49	6.02	4.29
5......	3.95	......	1.82	1.56	3.23	2.32	......	......	2.84	6.61	......	4.24
6......	3.90	2.53	1.78	1.58	3.21	2.30	......	......	......	6.63	5.88	......
7......	3.80	2.47	1.78	......	3.18	2.25	......	......	......	......	5.77	4.10
8......	......	2.44	1.76	1.63	3.18	2.23	......	......	......	6.60	5.68	......
9......	3.68	2.40	......	1.64	3.15	......	1.58	......	......	6.65	5.58	......
10......	3.55	2.37	1.74	1.67	3.13	2.15	......	......	......	6.78	......	3.95
11......	3.50	2.30	1.74	1.67	......	2.13	1.58	......	2.98	6.78	5.45	3.90
12......	3.48	......	1.72	1.68	3.05	2.08	......	......	......	6.75	......	......
13......	3.42	2.25	1.69	1.68	2.98	2.06	......	......	3.03	6.75	5.35	3.92
14......	3.38	2.25	1.68	......	2.95	2.06	......	......	......	......	5.40	3.95
15......	......	2.20	1.65	1.74	2.90	2.03	......	......	......	6.65	5.48	......
16......	3.30	2.18	......	1.74	2.83	......	......	......	......	6.65	5.45	......
17......	3.28	2.13	1.61	1.72	2.76	2.01	......	......	......	6.65	5.39	3.83
18......	3.25	2.16	1.59	1.70	......	2.00	......	......	2.99	6.70	......	3.78
19......	3.20	......	1.59	1.70	2.65	2.00	......	......	2.99	6.65	......	3.73
20......	3.20	2.21	1.58	1.73	2.62	1.98	......	......	2.99	6.61	......	......
21......	3.18	2.24	1.62	......	2.58	1.98	......	......	......	......	5.15	......
22	......	2.28	1.60	1.79	2.58	......	......	......	3.35	6.48	5.04	......
23	3.15	2.30	......	1.83	2.55	......	......	......	......	6.53	4.96	......
24	3.10	2.30	1.57	1.87	2.54	......	......	......	......	......	4.92	3.43
25	3.02	2.28	1.52	1.87	......	......	......	2.03	4.20	......	4.82	3.45
26......	2.95	......	1.48	1.95	2.47	......	......	......	4.42	6.44	......	3.50
27......	2.92	2.20	1.46	2.03	2.47	......	......	2.34	4.55	6.87	4.70	......
28......	2.90	2.13	1.46	......	2.47	......	......	......	4.67	......	4.67	......
29......	......	2.10	1.46	2.35	2.43	......	......	......	4.75	......	4.60	......
30......	2.87	2.04	......	2.70	2.40	......	......	......	4.87	......	......	......
31......	2.87	1.98	......	3.00	......	......	......	......	......	......	......	......

RICHELIEU RIVER AT FORT MONTGOMERY, ROUSES POINT

Location.— Inside the fort, 3/8 mile south of the international boundary, about 1/2 mile above mouth of Richelieu river, the outlet of Lake Champlain, and 1 mile northeast of the village of Rouses Point, Clinton county.

Drainage area.— 7,867 square miles, including 436 miles of water-surface (see page 181).

Records available.— 1875 to 1918.

Gage.— Staff, inside the fort. Elevation of gage zero, 92.50 feet above mean sea-level (elevation 93.31, B. C. datum); read by Thomas Bourke.

Extremes of stage.—Current year: Maximum elevation recorded, 98.95 feet on April 11, 12 and 15. Minimum elevation recorded, 93.7 feet on several days in October and February.

1869–1918: Maximum elevation recorded, 103.28 feet in April, 1869.* Minimum elevation recorded, 91.9 feet, November 13, 1908.

Coöperation.—Gage heights observed under direction of the corps of engineers of the United States Army and reported weekly to the United States Geological Survey.

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*Hoyt, J. C., Stream Measurements, 1903. North Atlantic, St. Lawrence river and Great Lakes Drainage: U. S. Geological Survey Water-Supply paper 97, page 340.

Daily gage height, in feet, of RICHELIEU RIVER AT FORT MONTGOMERY, ROUSES POINT, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	3.7	2.55	1.85	1.2	2.45	2.15	1.45	1.2	2.25	4.9	5.75	4.25
2.....	3.65	2.55	1.85	1.2	2.6	2.0	1.45	1.2	2.35	5.25	5.9	4.1
3.....	3.6	2.55	1.75	1.4	2.7	2.1	1.4	1.2	2.4	5.7	5.75	4.05
4.....	3.5	2.45	1.7	1.3	2.7	2.05	1.4	1.2	2.45	6.0	5.55	4.0
5.....	3.5	2.35	1.65	1.2	2.8	2.1	1.4	1.2	2.4	6.15	5.6	3.9
6.....	3.5	2.35	1.8	1.25	2.9	2.0	1.4	1.2	2.45	6.2	5.6	3.85
7.....	3.5	2.3	1.6	1.35	2.7	1.95	1.35	1.2	2.45	6.3	5.45	3.9
8.....	3.5	2.35	1.6	1.4	2.75	1.95	1.35	1.2	2.5	6.3	5.45	3.75
9.....	3.5	2.35	1.65	1.25	2.75	1.9	1.3	1.2	2.5	6.25	5.25	3.65
10.....	......	2.25	1.5	1.25	2.7	1.95	1.3	1.2	2.45	6.25	6.0	3.65
11.....	3.5	2.25	1.5	1.35	2.7	1.85	1.3	1.25	2.6	6.45	5.1	3.6
12.....	3.35	2.2	1.75	1.35	2.6	1.85	1.3	1.25	2.6	6.45	5.05	3.75
13.....	3.35	2.25	1.5	1.55	2.6	1.85	1.3	1.2	2.55	6.35	5.15	3.55
14.....	3.25	2.25	1.45	1.45	2.6	1.9	1.3	1.25	2.6	6.4	5.15	3.6
15.....	3.25	2.25	1.4	1.6	2.6	1.9	1.3	1.6	2.6	6.45	5.1	3.55
16.....	3.25	2.2	1.35	1.4	2.45	1.85	1.3	1.3	2.65	6.4	5.5	3.6
17.....	3.1	2.15	1.35	1.35	2.5	1.8	1.3	1.3	2.6	6.4	5.1	3.5
18.....	3.05	2.1	1.3	1.55	2.6	1.8	1.3	1.3	2.6	6.25	5.1	3.5
19.....	3.05	2.1	1.35	1.8	2.4	1.8	1.3	1.7	2.6	6.35	5.05	3.4
20.....	3.05	2.3	1.3	1.45	2.5	1.75	1.25	1.6	2.75	6.35	5.05	3.35
21.....	3.05	2.1	1.3	1.5	2.3	1.75	1.25	1.6	2.8	6.25	4.75	3.45
22.....	3.15	2.1	1.25	1.55	2.3	1.65	1.25	1.65	2.95	6.25	4.75	3.3
23.....	3.05	2.15	1.35	1.6	2.25	1.7	1.25	1.65	3.15	6.25	4.65	3.2
24.....	3.0	2.1	1.35	1.55	2.3	1.7	1.25	1.7	3.4	6.25	4.6	3.15
25.....	3.0	2.15	1.3	1.7	2.2	1.6	1.25	1.7	3.6	6.05	4.55	3.15
26.....	3.0	2.1	1.3	1.65	2.1	1.55	1.25	1.95	3.8	6.15	4.4	3.1
27.....	2.95	2.1	1.3	1.65	2.2	1.55	1.25	2.05	3.95	6.1	4.4	3.1
28.....	2.75	2.0	1.3	1.75	2.2	1.6	1.2	2.15	4.05	6.0	4.2	3.2
29.....	2.75	1.95	1.25	1.8	2.15	1.45	1.2	......	4.2	6.05	4.25	3.1
30.....	2.7	1.85	1.25	1.9	2.2	1.5	1.2	......	4.4	5.85	4.25	3.0
31.....	2.6	1.8	......	2.2	......	1.45	1.2	......	4.65	......	4.3	......

WOOD CREEK

DESCRIPTION

Wood creek proper rises among the hills in the central part of Washington county, at an elevation of about 300 feet, and flows in a general northerly direction, entering Lake Champlain at Whitehall. It has a number of tributaries, the two larger on the east being Big creek, also called East creek, which enters at Smith's Basin, and Mettawee river, which enters about 1½ miles above Whitehall. Big creek rises in the central part of Washington county at an elevation of about 1,000 feet, descending rapidly for a short distance to South Hartford, then falling slowly to Smith's Basin. Mettawee river is an interstate stream, rising in Dorset mountains, Vermont, crossing the State line into New York at Granville and entering Wood creek about 1½ miles above Whitehall. The drainage basin is a rugged area of rock mostly forest covered and tributaries are rather numerous and branching, there being no lakes or marshes. The principal tributary on the west is Halfway creek, entering Wood creek near Fort Ann. This creek with its tributaries is the outlet of Glen lake and several smaller lakes and ponds in the hilly region to the north of Glens Falls.

Wood creek flows through a by-pass at lock No. 9, passing over a concrete spillway that has a crest length of 50 feet at elevation 131.0 and enters the lower pool of the Barge canal just below lock No. 9. From this point to Lake Champlain it has been canalized as a part of the Barge canal system.

WOOD CREEK ABOVE DAM AT SMITH'S BASIN

This station, established October 24, 1916, is located above the spillway at lock No. 9. The gage, No. 122, is a standard Type A gage, having a range of 6 feet, between elevations 132.0 and 138.0, secured to the west wing of the spillway. A standard bench-mark plug is set near the gage at elevation 137.0 (B. C. datum).

It is read twice daily — morning and afternoon — to hundredths.

Daily elevation of water-surface (B. C. datum) of WOOD CREEK ABOVE DAM AT SMITH'S BASIN, for the year ended June 30, 1918. W. H. Barrett, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	132.69	132.54	132.56	132.28	133.15	132.65	132.55	132.10	133.50	133.30	132.74	132.70
2.....	132.67	132.54	132.56	132.25	132.98	132.68	132.55	132.10	133.10	133.18	132.75	132.68
3.....	132.63	132.54	132.55	132.25	132.88	132.64	132.55	132.10	133.00	133.08	132.68	132.67
4.....	132.64	132.52	132.56	132.30	132.80	132.75	132.55	132.10	132.50	132.86	132.70	132.62
5.....	132.61	132.50	132.54	132.32	132.75	132.68	132.55	132.10	132.50	132.78	132.65	132.65
6.....	132.60	132.51	132.55	132.39	132.75	132.60	132.55	132.10	132.60	132.75	132.65	132.62
7.....	132.60	132.57	132.55	132.59	132.72	132.62	132.55	132.10	132.60	132.75	132.66	132.68
8.....	132.58	132.55	132.54	132.60	132.68	132.60	132.50	132.10	132.60	132.60	132.68	132.66
9.....	132.59	132.56	132.50	132.60	132.70	132.60	132.50	132.10	132.65	133.00	132.65	132.65
10.....	132.56	132.56	132.52	132.59	132.69	132.55	132.45	132.10	132.70	133.24	132.65	132.65
11.....	132.56	132.56	132.50	132.59	132.66	132.58	132.30	132.10	132.65	133.01	132.68	132.70
12.....	132.56	132.56	132.49	132.56	132.65	132.52	132.30	132.10	132.65	132.95	132.69	132.70
13.....	132.64	132.58	132.42	132.55	132.65	132.50	132.30	132.20	132.69	132.90	132.72	132.68
14.....	132.63	132.56	132.45	132.56	132.65	132.50	132.25	132.23	132.73	133.18	133.36	132.88
15.....	132.60	132.61	132.45	132.58	132.64	132.51	132.20	132.26	132.69	132.95	133.15	132.78
16.....	132.60	132.56	132.42	132.58	132.60	132.54	132.20	132.26	132.69	132.75	132.84	132.72
17.....	132.60	132.55	132.42	132.60	132.60	132.58	132.20	132.30	132.72	132.75	132.78	132.68
18.....	132.58	132.58	132.41	132.60	132.62	132.60	132.15	132.30	132.72	132.78	132.72	132.66
19.....	132.60	132.56	132.38	132.58	132.60	132.60	132.10	132.45	133.95	132.80	132.70	132.65
20.....	132.60	132.55	132.34	132.66	132.60	132.61	132.10	134.00	134.15	132.74	132.68	132.65
21.....	132.60	132.55	132.35	132.62	132.60	132.62	132.10	134.05	134.28	132.72	132.74	132.61
22.....	132.58	132.58	132.30	132.62	132.61	132.60	132.10	133.00	134.02	133.16	132.72	132.65
23.....	132.58	132.56	132.28	132.62	133.18	132.60	132.10	132.85	133.94	133.02	132.72	132.72
24.....	132.59	132.56	132.29	132.62	133.06	132.60	132.05	132.70	133.70	132.92	132.66	132.75
25.....	132.58	132.55	132.26	132.66	132.80	132.60	132.10	132.75	133.45	132.78	132.64	132.72
26.....	132.56	132.55	132.26	132.64	132.75	132.60	132.10	133.45	133.52	132.71	132.72	132.65
27.....	132.56	132.55	132.25	132.64	132.70	132.60	132.10	134.20	133.00	133.16	132.78	132.65
28.....	132.56	132.52	132.26	132.78	132.70	132.60	132.10	133.90	133.14	132.68	132.76	132.62
29.....	132.56	132.56	132.25	132.78	132.60	132.60	132.10	......	133.10	132.69	132.70	132.60
30.....	132.58	132.56	132.20	133.52	132.60	132.60	132.10	......	133.32	132.70	132.72	132.60
31.....	132.56	132.56	......	133.75	......	132.55	132.10	......	133.40	......	132.72	......

BARGE CANAL ABOVE LOCK No. 9, AT SMITH'S BASIN

This station, established October 24, 1916, gives pool elevations on the summit level between locks Nos. 8 and 9. The gage, No. 120, is a standard Type A gage, having a range of 4 feet, between elevations 137.0 and 141.0, secured to the east lock wall at the upper end of the upper gate recess. A standard bench-mark plug is set near the gage at elevation 142.0 (B. C. datum).

The gage is read twice daily — morning and afternoon — to hundredths. During the winter the water drops below the gage, the supply from the Glens Falls feeder being shut off.

Daily elevation at water-surface (B. C. datum) of BARGE CANAL ABOVE LOCK No. 9, AT SMITH'S BASIN, for the year ended June 30, 1918. W. H. Barrett, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	139.15	139.54	139.80	139.32	139.55	138.60	......	......	......	......	......	139.05
2	139.00	139.52	139.28	138.85	139.65	138.38	......	......	......	......	......	139.08
3	139.18	139.28	139.76	139.20	139.50	137.88	......	......	......	......	......	139.10
4	139.15	139.30	139.42	139.45	139.32	137.52	......	......	......	......	......	139.20
5	139.35	139.32	139.58	139.58	138.94	137.65	......	......	......	......	......	137.80
6	139.22	138.82	139.80	139.92	138.90	137.85	......	......	......	......	......	138.68
7	138.98	139.22	139.26	139.96	138.60	137.68	......	......	......	......	......	139.85
8	139.20	139.12	139.55	140.05	138.48	......	......	......	......	......	......	139.58
9	139.20	138.88	139.96	140.15	138.78	......	......	......	......	......	138.01	139.88
10	139.10	138.92	139.55	139.88	139.52	......	......	......	......	......	139.30	138.88
11	138.88	139.58	139.48	140.04	139.85						139.22	139.72
12	139.42	139.66	138.88	140.08	140.12	......	......	......	......	......	138.76	139.78
13	139.28	139.70	138.54	139.30	139.55	......	......	......	......	......	139.20	139.88
14	139.40	139.70	139.02	139.00	140.02	......	......	......	......	......	139.50	139.32
15	139.42	139.62	138.60	139.18	139.78	......	......	......	......	......	139.24	139.46
16	139.28	139.68	138.18	139.30	139.72	......	......	......	......	......	138.59	139.68
17	139.24	139.04	138.68	139.50	139.68	......	......	......	......	......	139.12	139.80
18	139.16	139.22	138.55	139.78	139.52	......	......	......	......	......	139.48	139.52
19	139.42	139.38	138.70	140.12	139.58	......	......	......	......	......	138.44	139.22
20	139.38	139.34	138.25	139.08	139.50	......	......	......	......	......	138.90	138.86
21	139.34	139.26	138.30	139.15	139.20	......	......	......	......	......	139.88	138.86
22	139.04	139.24	138.55	139.28	139.20	......	......	......	......	......	139.92	139.61
23	139.30	139.45	138.88	139.28	139.80	......	......	......	......	......	139.90	139.38
24	138.58	139.58	139.35	138.96	139.88	......	......	......	......	......	139.50	139.35
25	138.90	139.12	138.98	139.02	139.58	......	......	......	......	......	139.74	139.52
26	139.38	138.95	139.30	139.05	138.55	......	......	......	......	......	139.72	139.70
27	139.60	139.16	139.08	139.08	138.50	......	......	......	......	......	139.38	139.42
28	139.40	139.46	139.00	139.48	138.58	......	......	......	......	......	138.98	139.12
29	139.36	139.71	138.68	139.88	138.40	......	......	......	......	......	139.70	139.30
30	139.30	139.58	138.95	140.15	138.32	......	......	......	......	......	139.78	139.42
31	139.38	139.72	......	139.55	......	......	......	......	......	......	139.79	......

WOOD CREEK BELOW LOCK No. 9, AT SMITH'S BASIN

This station, established October 24, 1916, gives the elevation of the lower pool at lock No. 9. The gage, No. 121, a standard Type A gage, having a range of 4 feet, between elevations 123.0 and 127.0, secured to the east lock wall at the upper end of the lower gate recess, was superseded on November 20, 1917, by a standard Type A gage, secured to the north end of the lower east approach wall. The gage has a range of 8 feet, between elevations 123.0 and 131.0. A standard bench-mark plug is set in the wall near the gage at elevation 130.0 (B. C. datum).

The gage is read twice daily — morning and afternoon — to hundredths.

Daily elevation of water-surface (B. C. datum) of BARGE CANAL BELOW LOCK No. 9, AT SMITH'S BASIN, for the year ended June 30, 1918. W. H. Barrett, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	124.20	124.35	124.36	124.38	125.08	124.35	124.25	124.20	125.25	125.30	124.58	124.50
2.....	124.32	124.18	124.35	124.22	124.72	124.55	124.22	124.20	125.05	125.38	124.62	124.48
3.....	124.44	124.24	124.38	124.15	124.60	124.48	124.20	124.20	125.00	125.34	124.55	124.50
4.....	124.35	124.30	124.35	124.18	124.58	124.25	124.20	124.20	124.90	124.92	124.58	124.42
5.....	124.40	124.28	124.28	124.28	124.52	124.38	124.20	124.20	124.90	124.84	124.48	124.04
6.....	124.32	124.28	124.29	124.40	124.45	124.25	124.20	124.20	124.92	124.62	124.45	124.25
7.....	124.32	124.38	124.26	124.35	124.52	124.28	124.20	124.20	124.95	124.50	124.44	124.45
8.....	124.28	124.30	124.25	124.30	124.40	124.30	124.20	124.20	124.95	124.60	124.42	124.46
9.....	124.40	124.38	124.30	124.30	124.38	123.00	124.20	124.20	124.98	125.65	124.39	124.40
10.....	124.38	124.48	124.25	124.20	124.38	123.15	124.20	124.20	125.00	125.19	124.39	124.45
11.....	124.35	124.42	123.80	124.15	124.34	123.40	124.20	124.20	124.90	124.98	124.68	124.42
12.....	124.38	124.35	123.78	124.15	124.40	123.75	124.20	124.20	124.90	124.85	124.65	124.56
13.....	124.42	124.28	124.16	124.18	124.08	124.08	124.20	124.25	124.92	124.82	124.70	124.75
14.....	124.40	124.30	123.29	124.28	124.28	124.05	124.20	124.27	124.95	124.98	126.02	124.56
15.....	124.44	124.32	123.65	124.22	124.35	124.05	124.20	124.30	124.94	124.78	125.30	124.48
16.....	124.50	123.85	123.72	124.22	124.36	124.05	124.20	124.30	124.92	124.76	124.82	124.40
17.....	124.41	124.21	123.52	124.30	124.28	124.10	124.20	124.30	124.90	124.69	124.72	124.45
18.....	124.42	124.30	124.10	124.18	124.36	124.15	124.20	124.32	124.90	124.69	124.62	124.40
19.....	124.70	124.32	123.88	124.12	124.28	124.28	124.20	124.60	125.50	124.78	124.45	124.38
20.....	124.53	124.22	123.55	124.40	124.32	124.32	124.20	125.82	126.09	124.62	124.50	124.38
21.....	124.45	124.18	123.95	124.50	124.28	124.28	124.20	126.00	126.80	124.60	124.85	124.38
22.....	124.42	124.18	124.05	124.30	124.30	124.25	124.20	125.40	126.76	125.02	124.72	124.45
23.....	124.38	124.28	124.10	124.30	125.32	124.26	124.20	125.40	126.62	124.85	124.62	124.55
24.....	124.05	124.25	123.90	124.40	124.85	124.30	124.20	125.38	126.10	124.70	124.55	124.52
25.....	124.28	124.35	124.00	124.40	124.55	124.30	124.20	125.40	126.08	124.70	124.42	124.46
26.....	124.22	124.28	124.15	124.35	124.48	124.35	124.20	126.50	126.00	124.68	124.66	124.42
27.....	124.34	124.28	123.35	124.32	124.19	124.35	124.20	125.65	125.32	124.62	124.68	124.42
28.....	124.22	124.24	123.62	124.73	124.35	124.32	124.20	125.35	125.22	124.59	124.72	124.35
29.....	124.34	124.25	123.55	124.72	124.38	124.30	124.20	......	125.50	124.55	124.54	124.40
30.....	124.08	124.40	123.70	126.60	124.20	124.30	124.20	......	125.52	124.49	124.48	124.38
31.....	124.25	124.36	......	126.12	......	124.25	124.20	......	125.50	......	124.50	......

WOOD CREEK ABOVE LOCK No. 11, NEAR COMSTOCK

This station, established October 29, 1916, is located at lock No. 11, about ¾ mile north of Comstock. The gage, No. 123, is a standard Type A gage, having a range of 4 feet, between elevations 122.0 and 126.0, secured to the upper end of the upper gate recess of the east lock wall. A standard bench-mark plug is located near the gage at elevation 129.0 (B. C. datum).

The gage is read twice daily — between 6 and 7 A. M. and 6 and 7 P. M. — to hundredths.

Daily elevation of water-surface (B. C. datum) of Barge Canal above Lock No. 11, near Comstock, for the year ended June 30, 1918. H. W. Steventon and Geo. A. Ruck, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	124.34	124.27	124.30	124.30	125.00	124.35	124.15	124.14	124.85	125.25	124.50	124.40
2.....	124.38	124.24	124.28	124.30	124.70	124.46	124.10	124.14	124.71	125.34	124.52	124.42
3.....	124.35	124.27	124.29	124.15	124.54	124.38	124.12	124.14	124.65	125.16	124.50	124.40
4.....	124.30	124.26	124.22	124.20	124.28	124.34	124.22	124.17	124.50	124.78	124.50	124.35
5.....	124.32	124.20	124.26	124.28	124.42	124.28	124.22	124.14	124.46	124.68	124.40	123.50
6.....	124.28	124.28	124.22	124.30	124.44	124.26	124.18	124.16	124.44	124.62	124.39	124.12
7.....	124.28	124.32	124.24	124.28	124.41	124.24	124.20	124.15	124.41	124.64	124.38	124.38
8.....	124.24	124.28	124.22	124.20	124.41	123.24	124.18	124.14	124.48	124.60	124.38	124.44
9.....	124.30	124.28	124.20	124.20	124.38	123.01	124.20	124.15	124.40	125.28	124.42	124.31
10.....	124.30	124.30	124.20	124.20	124.38	123.34	124.19	124.15	124.39	125.02	124.40	124.35
11.....	124.38	124.34	123.64	124.14	124.35	123.80	124.22	124.15	124.36	124.86	124.66	124.36
12.....	124.41	124.19	123.64	124.15	124.35	124.14	124.26	124.15	124.34	124.76	124.48	124.45
13.....	124.34	124.27	123.28	124.32	124.24	124.28	124.30	124.20	124.36	124.80	124.54	124.65
14.....	124.32	124.26	123.30	124.35	124.20	124.26	124.25	124.22	124.40	124.92	125.81	124.49
15.....	124.34	124.22	123.47	124.18	124.28	124.23	124.28	124.34	124.54	124.75	125.12	124.40
16.....	124.44	124.00	123.65	124.26	124.30	124.21	124.22	124.34	124.50	124.66	124.76	124.34
17.....	124.36	124.21	123.52	124.26	124.34	124.25	124.20	124.32	124.51	124.71	124.60	124.38
18.....	124.36	124.29	124.08	124.25	124.30	124.23	124.20	124.30	124.89	124.62	124.48	124.32
19.....	124.64	124.26	123.89	124.22	124.28	124.22	124.19	124.30	125.43	124.64	124.46	124.32
20.....	124.46	124.24	123.60	124.40	124.33	124.28	124.19	125.64	125.78	124.61	124.44	124.36
21.....	124.35	123.89	123.70	124.36	124.28	124.24	124.19	124.90	126.10	124.54	124.80	124.28
22.....	124.32	124.04	123.94	124.20	124.33	124.22	124.20	124.76	126.18	124.95	124.68	124.26
23.....	124.30	124.29	124.12	124.16	125.20	124.26	124.19	124.60	126.19	124.78	124.46	124.50
24.....	123.97	124.24	123.90	124.21	124.72	124.19	124.18	124.54	125.92	124.66	124.42	124.47
25.....	124.24	124.36	123.75	124.42	124.51	124.28	124.18	124.53	125.78	124.56	124.38	124.40
26.....	124.26	124.28	123.52	124.36	124.37	124.19	124.17	125.58	125.65	124.54	124.48	124.26
27.....	124.24	144.23	123.34	124.28	124.28	124.20	124.20	125.34	125.22	124.52	124.52	124.26
28.....	124.19	124.28	123.55	124.72	124.22	124.22	124.20	125.11	125.08	124.42	124.49	124.26
29.....	124.20	124.21	123.55	124.55	124.10	124.18	124.18	......	125.25	124.48	124.45	124.30
30.....	124.18	124.30	123.70	125.98	124.18	124.18	124.15	......	125.36	124.44	124.42	124.38
31.....	124.24	124.26	......	126.00	......	124.12	124.15	......	125.34	......	124.48	......

WOOD CREEK BELOW LOCK No. 11, NEAR COMSTOCK

This station, established October 29, 1916, is located at lock No. 11, about ¾ mile north of Comstock. The gage, No. 124, a standard Type A gage, having a range of 4 feet, between elevations 110.0 and 114.0, secured to the upper end of the lower gate recess of the east lock wall, was superseded on December 21, 1917, by a standard Type A gage, secured to the east side of the lower east approach wall. The gage has a range of 8 feet, between elevations 110.0 and 118.0. A standard bench-mark plug is set in the wall near the gage at elevation 116.0 (B. C. datum).

The gage is read twice daily — between 6 and 7 A. M. and 6 and 7 P. M.— to hundredths.

Daily elevation of water-surface (B. C. datum) of BARGE CANAL BELOW LOCK No. 11, NEAR COMSTOCK, for the year ended June 30, 1918. H. W. Steventon and Geo. A. Ruck, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	112.09	111.49	111.89	111.75	111.84	112.14	109.01	110.86	112.78	111.78	112.44	112.42
2.....	112.34	111.42	111.82	111.86	112.25	112.40	108.45	111.08	112.62	111.34	112.30	112.30
3.....	112.34	111.32	112.22	111.82	112.02	111.80	107.30	111.76	112.22	111.32	112.14	112.12
4.....	112.10	111.66	112.18	111.88	112.11	110.81	106.50	112.20	112.32	110.93	112.22	111.80
5.....	112.02	112.08	111.96	112.06	111.91	110.95	107.30	111.66	112.50	111.04	112.48	111.65
6.....	112.08	111.88	111.75	112.24	112.02	110.58	108.55	111.05	112.12	110.82	112.19	112.02
7.....	112.18	111.81	111.58	112.25	111.80	109.89	109.55	110.61	112.46	111.58	112.34	112.00
8.....	112.12	111.82	111.35	112.26	112.18	110.77	110.70	110.70	112.22	111.44	112.18	112.38
9.....	112.00	111.80	111.72	111.58	112.16	111.14	111.25	110.45	112.36	111.82	112.06	112.25
10.....	111.78	112.24	111.60	111.10	112.32	110.80	111.28	111.34	112.40	111.51	112.06	112.29
11.....	111.54	111.61	111.22	110.72	112.10	110.02	111.40	112.15	111.48	111.08	112.34	112.23
12.....	112.04	112.32	110.68	111.28	111.88	109.86	111.52	111.90	112.14	110.85	112.11	112.34
13.....	112.33	111.98	110.30	111.24	111.90	109.76	112.08	110.96	112.10	111.06	112.71	112.40
14.....	112.38	111.58	110.00	112.25	111.72	109.48	111.70	110.80	112.42	111.54	113.00	112.31
15.....	112.26	111.05	110.19	111.76	111.86	109.32	110.95	111.46	112.38	111.20	111.98	112.38
16.....	112.18	111.42	110.84	111.48	111.84	110.00	111.00	113.36	112.74	111.12	112.12	112.35
17.....	110.05	111.58	111.41	111.31	111.95	110.20	110.94	113.36	112.28	111.41	112.25	112.24
18.....	110.42	111.45	110.61	111.00	112.44	110.15	111.16	112.32	112.88	112.62	112.38	112.15
19.....	110.66	111.82	110.47	110.55	112.06	109.95	111.67	112.20	113.41	112.18	112.38	112.12
20.....	110.66	111.68	110.62	111.04	112.00	109.90	112.33	114.48	114.10	111.18	112.38	111.85
21.....	110.68	111.16	110.54	112.45	111.51	110.10	112.27	113.40	115.00	112.22	112.28	111.89
22.....	111.02	111.15	110.25	112.05	111.30	110.50	112.32	112.94	115.47	112.34	112.34	112.22
23.....	110.45	111.02	110.46	111.32	112.36	111.32	111.98	112.45	115.21	112.08	112.20	112.52
24.....	111.35	110.98	110.35	111.45	112.01	111.78	111.51	112.46	113.70	111.01	112.36	112.44
25.....	111.76	111.40	110.32	111.79	112.28	112.00	111.22	112.58	114.04	112.24	112.30	112.43
26	111.78	112.14	110.04	112.31	112.20	111.86	110.95	115.12	113.27	112.24	112.42	112.22
27.....	111.62	111.98	110.35	112.38	111.99	111.19	111.29	114.26	112.90	112.08	112.30	112.34
28.....	111.78	111.72	110.52	112.28	111.74	109.62	112.13	113.32	112.78	112.08	112.31	112.21
29.....	112.22	111.65	111.08	112.30	111.94	108.90	111.82	......	112.92	112.08	112.23	112.37
30.....	111.22	111.55	111.80	113.59	112.01	109.51	111.32	......	112.88	112.08	112.35	112.36
31.....	111.59	111.72	......	112.88	......	109.24	110.90	......	111.57	......	112.42	......

WOOD CREEK ABOVE LOCK No. 12, AT WHITEHALL

This station, established October 1, 1916, is located at the upper end of lock No. 12. The gage, No. 125, is a standard Type A gage, secured to the upper end of the east upper gate recess and has a range of 4 feet, between elevations 110.0 and 114.0. A standard bench-mark plug is set in the wall above the gage at elevation 118.0 (B. C. datum).

The gage is read twice daily — morning and afternoon — to tenths, with occasional readings to half-tenths.

Daily elevation of water-surface (B. C. datum) of BARGE CANAL ABOVE LOCK No. 12, AT WHITEHALL, for the year ended June 30, 1918. W. J. Berry, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	111.85	111.3	111.75	111.6	111.9	112.08	108.0	110.6	112.15	111.1	112.25	112.12
2.....	112.2	111.35	112.25	111.65	111.95	112.1	108.45	110.8	111.98	110.85	111.12	112.12
3.....	112.1	111.2	112.15	111.7	111.75	111.32	106.9	111.6	111.9	110.8	112.92	111.92
4.....	111.98	111.4	112.0	111.7	111.9	110.58	106.35	112.0	111.82	110.35	112.0	111.5
5.....	111.92	111.9	111.85	111.75	111.9	110.6	107.1	111.4	112.1	110.8	112.35	111.58
6.....	111.9	111.72	111.7	112.15	111.75	110.4	108.25	110.8	111.7	110.75	112.1	111.8
7.....	112.1	111.65	111.55	112.15	111.75	109.55	109.5	110.35	111.95	111.45	112.05	111.85
8.....	111.98	111.6	111.4	111.55	111.95	110.25	110.5	110.5	111.78	111.25	112.05	112.15
9.....	112.0	111.55	111.55	111.3	111.7	110.98	110.9	110.0	111.92	110.95	111.9	112.05
10.....	111.55	112.05	111.7	111.05	112.05	110.25	111.12	111.15	112.15	111.0	111.9	112.08
11.....	111.35	112.0	111.2	110.65	112.02	109.7	111.25	111.95	111.2	110.75	112.1	111.95
12.....	111.92	112.15	110.45	110.6	111.5	109.6	111.45	111.65	111.92	110.65	111.9	112.32
13.....	112.2	111.8	110.18	111.25	111.9	109.0	111.92	110.65	111.8	110.90	112.35	112.25
14.....	112.3	111.4	109.95	112.1	111.65	108.9	111.50	110.5	112.05	111.25	111.85	112.15
15.....	112.15	110.88	110.15	111.7	111.55	108.35	110.55	111.18	111.98	111.05	111.75	112.18
16.....	112.0	111.4	110.7	111.5	111.6	110.0	110.8	113.18	112.4	110.92	111.98	112.18
17.....	110.0	111.45	111.0	111.15	111.8	110.15	110.65	113.05	111.88	111.10	112.12	112.0
18.....	110.3	111.4	110.1	110.95	112.12	109.85	110.95	112.2	112.15	112.3	112.18	111.9
19.....	110.35	111.7	110.3	111.1	111.65	109.7	111.42	111.85	112.1	111.9	111.9	111.8
20.....	110.55	111.48	110.55	110.95	111.7	109.65	112.2	112.4	112.1	111.92	112.1	111.75
21.....	110.75	111.4	110.4	112.25	111.3	109.8	112.08	112.0	112.1	112.12	112.1	111.75
22.....	111.05	111.05	110.1	111.85	111.0	110.3	112.1	111.72	112.05	112.0	112.18	111.9
23.....	110.15	110.92	110.3	111.58	112.12	111.15	111.65	111.58	112.05	111.9	112.0	112.2
24.....	111.0	110.9	110.15	111.3	111.85	111.25	111.3	111.8	111.08	111.8	112.1	112.2
25.....	111.8	111.35	110.25	111.75	111.95	112.0	111.05	112.18	112.2	112.05	112.08	112.25
26.....	111.6	111.55	109.85	112.15	111.98	111.55	110.78	112.3	111.88	112.05	112.12	112.02
27.....	111.5	111.8	110.1	112.15	111.82	*a*	110.98	112.25	112.12	111.88	112.08	111.1
28.....	111.58	111.60	110.2	112.15	111.58	*a*	111.92	112.22	112.0	112.0	112.1	111.92
29.....	112.1	111.45	111.05	112.15	111.85	*a*	111.42	......	112.0	111.92	111.98	112.2
30.....	111.25	111.35	111.7	112.35	111.85	*a*	111.1	......	111.8	112.2	112.3	112.1
31.....	111.5	111.5	......	111.8	......	*a*	110.75	......	110.65	......	112.08	......

a No record; water below 111.8.

LAKE GEORGE

For the purpose of determining the rate of change and the range in elevation of the water-surface of the lake, gages were established on Lake George in July, 1913, at three points — Lake George, Sagamore (Bolton Landing) and Rogers Rock — by the United States Geological Survey in coöperation with the New York State Conservation Commission.

The gages were not set to any particular datum, but each was referred to a substantial bench-mark by the use of an engineer's level. The gages were read once each day to the nearest half-tenth and the force and direction of the wind recorded.

A comparative study of these gage heights and those obtained at the mill of the International Paper Company indicates that the zeros of all three gages are below the crest of the dam as follows:

Lake George	4.75 feet below crest
Sagamore	4.9 feet below crest
Rogers Rock	3.4 feet below crest

All three gages were read until June 30, 1914. Comparison of the records up to this date showed that one gage would indicate the mean elevation of the lake and the observations at Lake George and Sagamore were discontinued July 1, 1914.

LAKE GEORGE AT ROGERS ROCK

Location.— At a boat-house in a small bay on the north side of the steamboat landing at Rogers Rock, Essex county.

Drainage area.— Not measured.

Records available.— July 10, 1913, to June 30, 1918.

Gage.— Vertical staff fastened to a pile in the back end of the boat-house. Datum, 3.15 feet below crest of dam at outlet of lake. Gage read once daily by George O. Cook.

Extremes of stage.— Current year: Maximum stage recorded, 4.2 feet, May 20, 22, 27 and 30, and June 3. Minimum stage recorded, 1.55 feet, February 16.

1913–1918: Maximum stage recorded, 4.98 feet, May 2, 1914.

Minimum stage recorded, 1.2 feet on November 21 and December 22, 1916.

Regulation.— The elevation of lake surface is regulated by the operation of gates and wheels at the dam at the outlet of the lake at Ticonderoga.

Coöperation.— Station established by the United States Geological Survey in coöperation with the State Conservation Commission. Gage heights for current year furnished by International Paper Company.

Daily gage height, in feet, of LAKE GEORGE AT ROGERS ROCK, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	4.03	3.57	2.88	2.20	2.60	2.25	1.85	1.70	1.82	2.80	3.82	4.10
2.....	4.00	3.53	2.90	2.30	2.58	2.28	1.90	1.70	1.85	2.92	3.90	4.15
3.....	3.95	3.52	2.87	2.28	2.55	2.22	1.80	1.72	1.80	3.00	3.80	4.20
4.....	3.90	3.48	2.85	2.30	2.55	2.22	1.78	1.70	1.82	3.12	3.80	4.05
5.....	3.87	3.40	2.80	2.25	2.52	2.20	1.75	1.62	1.88	3.20	3.85	4.00
6.....	3.85	3.35	2.82	2.28	2.58	2.15	1.78	1.65	1.85	3.22	3.85	4.02
7.....	3.85	3.83	2.78	2.18	2.50	2.10	1.80	1.62	1.82	3.25	3.90	4.10
8.....	3.87	3.37	2.75	2.20	2.52	2.08	1.82	1.65	1.80	3.30	3.88	4.05
9.....	3.78	3.40	2.80	2.12	2.50	2.28	1.78	1.70	1.85	3.35	3.80	4.08
10.....	3.77	3.33	2.70	2.10	2.45	2.20	1.75	1.70	1.88	3.42	3.88	3.98
11.....	3.75	3.30	2.68	2.12	2.40	2.15	1.78	1.68	1.92	3.48	3.85	4.00
12.....	3.80	3.25	2.65	2.10	2.35	2.10	1.80	1.65	1.95	3.52	3.92	4.08
13.....	3.78	3.23	2.62	2.12	2.40	2.05	1.82	1.65	1.95	3.55	4.02	4.00
14.....	3.77	3.25	2.60	2.12	2.38	2.10	1.80	1.62	1.92	3.58	4.08	4.05
15.....	3.75	3.22	2.55	2.10	2.35	2.12	1.85	1.60	1.95	3.60	4.05	3.90
16.....	3.80	3.20	2.53	2.05	2.30	2.10	1.90	1.55	1.98	3.62	4.15	3.98
17.....	3.78	3.18	2.50	2.02	2.35	2.05	1.88	1.60	2.00	3.65	4.12	3.95
18.....	3.75	3.15	2.47	2.00	2.32	2.08	1.85	1.65	1.98	3.68	4.15	3.90
19.....	3.82	3.10	2.50	2.15	2.35	2.05	1.88	1.68	2.00	3.70	4.18	3.78
20.....	3.80	3.00	2.50	2.10	2.30	2.02	1.85	1.70	1.98	3.72	4.20	3.75
21.....	3.78	3.15	2.48	2.00	2.22	2.00	1.82	1.68	2.02	3.75	4.15	3.80
22.....	3.80	2.98	2.40	1.98	2.25	1.98	1.85	1.65	2.15	3.85	4.20	3.78
23.....	3.75	2.95	2.45	1.95	2.30	2.00	1.82	1.65	2.20	3.82	4.15	3.78
24.....	3.70	3.00	2.45	1.98	2.30	1.98	1.80	1.68	2.30	3.85	4.12	3.75
25.....	3.72	3.07	2.43	2.08	2.32	2.00	1.85	1.70	2.35	3.80	4.10	3.70
26.....	3.75	3.00	2.42	2.05	2.35	1.95	1.80	1.80	2.40	3.82	4.15	3.68
27.....	3.65	2.98	2.40	2.15	2.22	1.92	1.75	1.80	2.42	3.80	4.20	3.65
28.....	3.63	3.00	2.38	2.08	2.25	1.95	1.78	1.82	2.45	3.80	4.12	3.68
29.....	3.60	2.97	2.37	2.10	2.20	1.90	1.80	......	2.50	3.82	4.12	3.62
30.....	3.57	2.88	2.35	2.50	2.25	1.88	1.78	......	2.55	3.80	4.20	3.58
31.....	3.53	2.85	......	2.58	......	1.88	1.75	......	2.62	......	4.18	......

AUSABLE RIVER

DESCRIPTION

Ausable river is formed by the junction of the east and west branches, which have their headwaters in the northwestern part of Essex county. The east branch flows from upper Ausable lake, at an elevation of 1,990 feet above sea-level. The west branch, formed by several small streams that lie in the valley to the west and north of the east branch, receives the outflow from Lake Placid at elevation 1,864 feet. Both branches flow north and east to their junction at the village of Ausable Forks, about 20 miles from the mouth of the stream along the river, from which point the river flows northeast, entering Lake Champlain about 10 miles south of Plattsburg and opposite and slightly north of the city of Burlington, Vt. In this 20 miles a total descent of 460 feet occurs, a portion of which is in the famous Ausable chasm.

The drainage basin of Ausable river occupies a plateau at a general elevation of 800 to 1,200 feet, the mountainous boundaries of the watershed rising to altitudes of 3,000 to 5,000 feet. Throughout the entire course, the river is fed by small mountain streams that enter at nearly right angles from the mountains on either side. There are few lakes in this drainage area to act as regulators of the flow, and, owing to the great differences of elevation throughout the area, the stream has what is called a flashy discharge, its fluctuations being large and rapid.

Owing to the fact that this basin lies on the eastern slope of the Adirondack mountains, the average rainfall is less than for those basins whose streams rise on the western and southern slopes, the mean yearly precipitation being about 32 inches.

Drainage areas of AUSABLE RIVER*

LOCATION	AREA	
	Place to place	Total
	Square miles	*Square miles*
Lake Placid, water-surface	....	3.80
Lake Placid, drainage area	21.80	21.80
West branch from foot of Lake Placid to junction with east branch	211.20	233.00
East branch above forks	196.90	429.90
Above gaging station	40.10	470.00
Gaging station to Keeseville	6.10	476.10
Keeseville to Birmingham	27.40	503.50
Birmingham to mouth	17.80	521.30

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* From Willsboro, Ausable, Lake Placid, Mount Marcy and Elizabethtown sheets of the United States Geological Survey topographic maps.

AUSABLE RIVER AT AUSABLE FORKS

Location.— In the village of Ausable Forks, Clinton county, immediately below the junction of the east and west branches and about 15 miles above the mouth of the river.

Drainage area.— 444 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— August 17, 1910, to June 30, 1918.

Gage.— Chain on left bank about 1,000 feet below junction of east and west branches; read by A. S. Baker.

Discharge measurements.— Made from a cable about 1½ miles below gage, or by wading either near the cable or a short distance above the gage.

Channel and control.— Stone and gravel, occasionally shifting. Channel divided by an island opposite the gage.

Extremes of discharge.— Current year: Maximum stage recorded, 6.46 feet at 5:15 P. M., April 1; discharge, 6,070 second-feet. Minimum stage recorded, 3.44 feet, at 5 P. M., September 16; discharge, 132 second-feet.

1910–1918: Maximum stage recorded, 10.2 feet in the evening of March 27, 1913; discharge, about 25,000 second-feet. Minimum stage recorded, 3.0 feet at 7 A. M., July 21, 1912; discharge, practically zero.

Special study.— A portable water-stage recorder was installed at this station and a continuous gage height record obtained, July 11 to September 30, 1914, which showed a continual small fluctuation in stage. It was shown that monthly mean discharge based on semidaily gage heights is in error as follows: July 11 to 31, 3.5 per cent; August, 4.1 per cent; September, 0.5 per cent. Some of the daily discharges showed greater errors, but these were largely compensating.

Ice.— Stage-discharge relation slightly affected by ice.

Accuracy. — Stage-discharge relation probably permanent between dates of shifting. Affected by ice for short periods from December to March. Rating curve fairly well defined between 175 and 3,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of AUSABLE RIVER AT AUSSABLE FORKS, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Aug. 28	C. C. Covert	3.52	160
1918			
Jan. 10 *a*	J. W. Moulton	3.59	124
May 4	J. W. Moulton	4.78	1,790
May 6	J. W. Moulton	5.28	2,840

a Measurement made through partial ice cover.

Daily discharge, in second-feet, of AUSABLE RIVER AT AUSABLE FORKS, during the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	851	345	319	371	1,440	234	220	80	890	4,210	3,690	656
2	751	955	1,070	417	1,010	221	220	80	668	5,600	3,320	588
3	536	1,530	407	371	751	189	260	80	1,060	3,950	3,690	679
4	446	2,720	287	379	599	183	260	85	557	2,490	1,830	557
5	465	2,270	250	1,090	546	208	220	100	515	1,730	1,440	345
6	336	1,620	242	739	455	202	160	110	398	1,350	2,160	319
7	287	2,160	227	597	436	183	130	100	362	1,530	2,720	465
8	257	2,050	214	455	388	170	120	95	371	1,620	2,950	1,230
9	221	2,490	202	398	407	157	120	100	407	2,380	1,440	1,940
10	214	388	257	345	362	180	120	110	354	1,530	1,260	998
11	214	287	214	319	311	180	110	110	319	1,260	2,720	515
12	287	214	221	398	328	190	100	140	336	1,120	1,350	1,130
13	398	221	208	1,010	302	200	90	200	426	1,010	1,620	1,530
14	319	202	227	578	264	220	80	407	417	1,200	3,070	1,190
15	264	214	170	567	280	200	80	864	407	2,270	1,730	813
16	250	242	132	955	264	200	90	800	336	1,620	1,200	567
17	221	227	177	567	227	220	100	505	319	2,600	929	484
18	214	......	183	484	272	220	110	436	526	2,600	851	388
19	189	......	170	465	280	200	110	668	788	1,830	764	328
20	142	......	916	903	280	160	140	3,190	788	1,440	1,040	257
21	157	......	702	727	280	160	130	942	1,260	1,440	1,030	264
22	164	......	465	588	272	160	120	903	2,050	5,030	764	214
23	153	177	319	484	311	180	110	890	3,070	2,490	800	328
24	202	189	272	515	311	200	110	788	2,160	2,600	702	567
25	153	189	250	864	202	220	120	714	1,730	1,440	588	546
26	214	177	221	788	208	240	130	3,070	1,350	1,350	825	407
27	157	189	202	1,070	221	240	130	2,160	1,040	1,350	825	354
28	153	183	214	1,260	208	220	110	1,620	903	1,830	764	311
29	153	189	354	1,620	208	220	110	......	1,040	1,730	1,260	272
30	157	257	294	2,400	208	240	100	......	1,350	3,690	903	242
31	132	272	......	3,070	......	220	85	......	1,830	.....	714	.....
Mean	279	679	313	800	388	201	132	691	904	2,210	1,580	616

NOTE.— Discharge, December 10 to February 13, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of AUSABLE RIVER AT AUSABLE FORKS, for the year ended June 30, 1918

[Drainage area, 444 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	851	142	279	0.629	0.73
August	2,720	177	679	1.53	1.76
September	1,070	132	313	0.704	0.79
October	3,070	319	800	1.80	2.08
November	1,440	202	388	0.874	0.98
December	240	157	201	0.453	0.52
January	260	80	132	0.298	0.34
February	3,190	80	691	1.56	1.62
March	3,070	319	904	2.04	2.35
April	5,600	1,010	2,210	4.98	5.56
May	3,690	588	1,580	3.56	4.10
June	1,940	214	616	1.39	1.55
The year	5,600	80	731	1.65	22.38

WEST BRANCH OF AUSABLE RIVER NEAR NEWMAN

Location.— On the farm of James Dudley, about 4 miles northeast of Newman, Essex county, and about 4 miles below its confluence at Lake Placid.

Drainage area.— 116 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— June 7, 1916, to December 31, 1917, when the station was discontinued.

Gage.— Staff, in two sections, on the right bank near the residence of Mr. Dudley. Lower section is inclined, graduated from 1.0 foot to 6.5 feet; the upper section is vertical, graduated from 6.55 feet to 10.1 feet; read by James Dudley.

Discharge measurements.— Made by wading at low stages and from a cable, about 300 feet above gage, at medium and high stages.

Channel and control.— Solid rock.

Extremes of stage.— Current year: Maximum stage recorded, 6.65 feet at 6 P. M., November 30. Minimum stage recorded, 2.3 feet, several times in August.

1916–1918: Maximum stage recorded, 6.65 feet at 6 P. M., November 30, 1917. Minimum stage recorded, 1.7 feet at 7 P. M., June 28, 1917.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Sufficient data have not been obtained for computation of discharge.

DISCHARGE MEASUREMENT.—The following discharge measurement was made August 29, 1917, by C. C. Covert: Gate height, 2.78 feet; discharge, 92 second-feet.

Daily gage height, in feet, of WEST BRANCH OF AUSABLE RIVER NEAR NEWMAN, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.35	2.3	2.85	3.05	4.08	2.57
2	3.35	2.4	3.18	3.1	3.7	2.6
3	3.15	2.3	2.85	2.98	3.45	2.55
4	3.22	2.4	2.72	3.22	3.38	2.6
5	2.95	2.4	2.65	3.55	3.28	2.58
6	2.9	2.32	2.68	3.56	2.9	2.6
7	2.98	2.35	2.8	3.22	3.02	2.52
8	2.7	2.88	2.68	3.0	3.12	2.42
9	2.78	2.85	2.62	3.02	2.95	2.55
10	2.7	3.08	2.62	2.9	2.95	2.5
11	2.62	2.65	2.6	2.88	2.88	2.5
12	2.88	2.62	2.58	2.75	2.82	2.72
13	2.9	2.68	2.82	3.92	2.65	2.42
14	2.85	2.42	2.58	3.25	2.5	2.48
15	2.78	2.52	2.38	3.3	2.75	2.72
16	2.7	2.58	2.42	3.62	2.58	2.62
17	2.72	2.65	2.45	3.2	2.75	2.7
18	2.65	2.7	2.42	3.05	2.62	2.65
19	2.75	2.62	2.52	3.05	2.75	2.78
20	2.7	2.6	3.98	3.98	2.95	2.78
21	2.65	2.6	3.25	3.52	2.75	2.8
22	2.68	2.58	2.95	3.38	2.72	2.8
23	2.6	2.52	2.78	3.08	2.8	2.62
24	2.42	2.58	2.72	3.05	2.78	2.5
25	2.68	2.58	2.68	3.4	2.75	2.4
26	2.65	2.55	2.52	3.32	2.75	2.55
27	2.52	2.52	2.52	3.48	2.55	2.58
28	2.5	2.45	2.78	4.42	2.55	2.6
29	2.5	2.65	2.98	3.96	2.7	2.75
30	2.45	2.82	2.88	5.5	2.58	2.45
31	2.48	3.02	......	5.0	......	2.45

NOTE.— Station discontinued December 31, 1917.

SARANAC RIVER

DESCRIPTION

Saranac river rises in southeastern Franklin county and flows northeastward to a point near Cadyville and thence eastward into Lake Champlain at Plattsburg. The southern boundary of the basin is the Ampersand mountain range and the stream drains the north slope of the most elevated region of the state of New York. About 16.2 per cent of the upper drainage area is water-surface. The areas tributary to the river are shown in the following table:

Drainage areas of SARANAC RIVER [*]

LOCATION	Area	Total area
	Square miles	*Square miles*
Above Saranac lake State dam	....	157.50
Above Saranac Lake village	44.90	202.40
Above Franklin Falls	104.30	306.70
North branch, Saranac river	136.60	136.60
At junction, North branch	....	498.80
Above High Falls	19.60	518.40
Above Cadyville	74.60	593.00
Above Kent Falls	2.90	595.90
Above Morrisonville	2.00	597.90
Above Lozier dam	26.10	[a] 624.00
Above mouth	5.60	629.60

[*] From Bien's Atlas of New York. [a] The U. S. Geological Survey gives the total area above the Lozier dam, measured on the U. S. G. S. topographic maps, as 607 square miles.

The results of gagings of Saranac river at a station formerly maintained at Saranac lake are given in the Report of the State Engineer and Surveyor for 1903, supplement, pages 71–4.

In 1854 a timber dam was built below lower Saranac lake for the purpose of flooding logs. In 1899–1901 a masonry dam and lock were erected by the State at this point.

SARANAC RIVER NEAR PLATTSBURG

Location.— At the Indian rapids power-plant (formerly known as Lozier dam) of the Plattsburg Gas and Electric Company, about 6 miles above the mouth of the river at Plattsburg, Clinton county.

Drainage area.— 607 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— March 27, 1903, to June 30, 1918.

Gages.— Crest gage, a vertical staff on the angle of the wing wall at the end of the racks. Datum raised 0.76 foot, August 20, 1906.

Tail-race gage, a vertical staff spiked to timber-work dike between tail-race and river and about 50 feet below power-house. Datum has changed slightly, due to settling of cribwork. Records of kilowatt output are obtained by a wattmeter on switchboard at half-hour intervals. Gages and wattmeters read by power-house operators.

An inclined staff gage at the cable station, about ¼ mile below the dam.

Discharge measurements.— Made from a cable at head of Indian river, ¼ mile below the dam. Low-water measurements made by wading under cable or in tail-race.

Discharge rating.— Records include flow over concrete spillway 171.25 feet in crest length, a rating for which has been prepared by use of coefficients* derived from experiments made in the hydraulic laboratory of Cornell University on a model section of the dam; the discharge through two power units equipped with 300-kilowatt generators, which have been rated by current-meter measurements; and the discharge through two 5-foot waste-gates when open.

Occasional observations are made on the inclined staff gage at the cable as a check on the ratings of spillway and turbines.

Extremes of discharge.— Current year: Maximum daily discharge, 5,600 second-feet, April 3. Minimum daily discharge, 100 second-feet, Sunday, August 29.

Special study.— A portable water-stage recorder was operated at the cable for a short period in July, 1914. Mean daily discharge computed from its record compared very closely with mean daily discharge based on power-plant.

Ice.— The crest of the spillway is kept free from ice, so that the stage-discharge relation is not affected.

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* Horton, R. E., Weir experiments, coefficients and formulas, U. S. Geological Survey, Water-Supply Paper 200, pages 98–100, 1907.

Regulation.— The lakes and ponds on the main stream and tributaries above the station comprise a water-surface area of about 25.5 square miles. The actual storage afforded by these reservoirs has been largely increased by the State dam at Lower Saranac lake, the operation of which affects the distribution of flow throughout the year.

Accuracy.— Discharge measurements made during the year indicate that the ratings of spillway and turbines have not changed. Discharge over the spillway ascertained by applying to the rating table mean gage heights for 6-hour periods. Discharge through the turbines ascertained by applying to their ratings the mean kilowatt output and head for 12-hour periods. Results fairly good.

Coöperation.— Station maintained by the United States Geological Survey in coöperation with the State Conservation Commission. Gage height records and wattmeter readings furnished by Plattsburg Gas and Electric Company, Herbert A. Stutchbury, Superintendent.

Discharge measurements of SARANAC RIVER NEAR PLATTSBURG, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
		Feet	*Sec.-ft.*
1917 Aug. 30 *a*......	C. C. Covert....................................	....	309
1918 May 9.......	J. W. Moulton..................................	2.79	1,300

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a Measurement made in tail-race: no appreciable flow over spillway.

Daily discharge, in second-feet, of SARANAC RIVER NEAR PLATTSBURG, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	1,140	270	400	740	1,040	440	330	450	1,550	3,500	1,750	1,040
2.....	1,160	290	330	880	940	440	440	640	2,600	4,900	2,000	1,300
3.....	1,080	470	380	1,080	660	520	410	440	1,500	5,600	1,700	920
4.....	980	430	280	940	820	410	520	860	1,200	4,000	1,650	800
5.....	960	290	230	880	760	370	450	410	1,100	3,200	1,800	820
6.....	940	460	270	920	700	360	480	420	920	2,700	1,600	700
7.....	980	260	245	720	740	300	540	700	900	2,450	1,600	1,240
8.....	760	240	380	760	760	260	340	840	800	2,600	1,550	1,300
9.....	820	320	245	520	780	230	520	440	760	2,500	1,500	1,060
10.....	680	450	300	460	740	420	560	620	620	2,000	1,300	920
11.....	800	310	230	500	680	310	470	880	780	1,800	1,250	860
12.....	740	260	250	430	800	280	580	470	820	1,650	1,400	1,000
13.....	780	260	205	560	800	470	540	640	780	1,600	1,300	1,060
14.....	840	210	250	490	800	450	810	580	960	1,800	1,450	1,050
15.....	700	320	260	620	780	470	750	580	820	1,850	1,250	960
16.....	900	320	210	520	720	410	680	660	840	2,100	1,300	920
17.....	680	400	310	480	760	560	460	920	620	2,050	1,350	880
18.....	660	450	280	600	680	420	390	840	900	2,100	1,240	880
19.....	840	300	290	520	620	300	560	640	860	1,950	1,250	840
20.....	740	340	1,180	560	520	370	280	760	900	1,850	960	800
21.....	700	270	840	640	500	390	520	2,200	1,450	1,800	1,000	800
22.....	660	290	620	660	480	370	810	1,560	2,050	2,200	740	780
23.....	660	290	440	540	410	290	300	1,240	2,900	2,200	820	840
24.....	660	320	470	540	270	370	240	960	2,300	2,050	920	820
25.....	940	310	300	620	225	260	330	1,020	2,300	1,850	820	800
26.....	580	260	310	880	290	480	380	1,550	2,300	1,750	1,040	720
27.....	580	540	250	700	260	370	700	2,000	2,000	1,700	1,200	680
28.....	640	210	740	680	320	320	1,050	1,900	1,900	1,500	1,400	700
29.....	740	100	840	880	500	470	410	......	2,050	1,350	960	720
30.....	640	210	920	900	500	440	320	......	2,500	1,700	940	680
31.....	700	270	......	1,220	......	460	460	......	2,800	......	900	......
Mean...	796	312	408	692	627	388	488	899	1,440	2,340	1,290	897

Monthly discharge of SARANAC RIVER NEAR PLATTSBURG, for the year ended June 30,1918

[Drainage area, 607 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	1,160	580	796	1.31	1.51
August	470	100	312	0.514	0.59
September	1,180	205	408	0.672	0.75
October	1,220	430	692	1.14	1.31
November	1,040	225	627	1.03	1.15
December	560	230	388	0.639	0.74
January	1,050	240	488	0.804	0.93
February	2,200	410	899	1.48	1.54
March	2,900	620	1,440	2.37	2.73
April	5,600	1,350	2,340	3.86	4.31
May	2,000	740	1,290	2.13	2.46
June	1,300	680	897	1.48	1.65
The year	5,600	100	880	1.45	19.67

HUDSON RIVER DRAINAGE BASIN

DESCRIPTION OF BASIN

The principal sources of the Hudson river lie in the wildest portion of the Adirondack mountains, in Essex county, northeastern New York. A number of branches, any one of which might possibly be considered the main stream, form its upper waters; but if the highest collected and permanent body of water be assumed as the true head, then the source of the Hudson becomes Lake Tear-of-the-Clouds, which lies at an elevation of 4,322 feet above tide, in the center of the triangle formed by Mount Marcy, Skylight and Gray peaks.

The river flows rather irregularly southward until it reaches the northern boundary of Saratoga county, where it makes a sharp turn and flows eastward for about 12 miles, passing through the mountains and forming, as it cuts across the rocky strata, several falls of great height and beauty. At Hudson Falls, just below Glens Falls, it makes another abrupt turn and flows southward, continuing in this direction until it empties into New York bay.

From Lake Tear-of-the-Clouds to the mouth of the river the distance by water is probably about 300 miles. The total area drained is 13,366 square miles. The river is tidal to Troy, which is also at the head of navigation.

The headwater region is mountainous in character, is in general heavily wooded and is dotted with numerous lakes and ponds. The rocks, belonging to the oldest formation and mainly granitic, are either bare or covered only with a layer of spruce duff, humus and forest litter. The river emerges from the mountain region a few miles west of Glens Falls and from there to Troy the topography is moderately rolling and the soil is chiefly sand. Below Troy the river follows the great depression which extends almost due north and south between New York bay and the St. Lawrence, flowing in an open valley bordered by well-cultivated lands, which rise with moderate slope from the stream. The Catskill Mountain region is reached 20 or 30 miles below Albany and thence to the mouth of the river the immediate valley is flanked by high hills, the Highlands of Orange county, and the precipitous Palisades being especially noticeable.

The fall in the upper portion of the course is very rapid, amounting to about 64 feet per mile from Lake Tear-of-the-Clouds to the mouth of North creek, a distance of about 52 miles. From the mouth of North creek to the mouth of the Sacandaga the descent is nearly 14 feet per mile, distributed among rapids which diminish in frequency as the Sacandaga is approached. In the succeeding 26 miles to Fort Edward the river descends 418 feet more. One hundred and seventy-five feet is comprised within the three abrupt pitches at Palmer, Glens, and Bakers Falls, while most of the remainder occurs in the rapids between Jessup's Landing and the oxbow above Glens Falls. Between Glens Falls and Troy nearly the entire fall of the river is utilized for the development of water-power. Between Fort Edward and Troy the Hudson river is canalized as part of the Barge canal system for practically the entire distance.

The tributaries of the Hudson are numerous and many of them are large and important. Indian river, Schroon river and the Sacandaga unite with the main stream above Glens Falls and between the latter point and Troy it receives Batten kill, Fish creek, Hoosic river and the Mohawk, the latter having several important tributaries, including West and East Canada and Schoharie creeks. The tributaries below Troy include Catskill, Esopus and Rondout creeks and Wallkill river from the west and Kinderhook creek, Jansen kill, Wappinger creek, Fishkill creek and Croton river from the east.

Below Troy the bed of the Hudson river is depressed below tide-water level. The stage of the stream is controlled by tidal action, by the inflow of the main stream and by the lateral drainage jointly.

The mean annual precipitation on the total basin of the Hudson is probably about 43 inches. It reaches a maximum of more than 55 inches in the heights of the Adirondacks, while in the eastern portion of the drainage area, in southern Vermont, the mean annual total is only about 39 inches. Conditions during the winter period vary from the extreme cold and deep snow of the Adirondacks to the areas in the southern portion of the basin, which are subject to frequent winter thaws.

The flow of the upper Hudson is controlled to some extent during the dry season by the use of Indian lake storage reservoir. The natural storage facilities in the Adirondack region, tapped on the east and south by the upper Hudson and the Mohawk, are unsurpassed, there being a great many ponds and lakes, many of large size and fed from extensive drainage areas.

The longest run-off record in the Hudson river drainage basin is that obtained at the upper dam at Mechanicville, which extends back to 1888.

HUDSON RIVER

In the following pages will be found tables giving the daily discharge and monthly run-off of the Hudson river above Troy and of its tributaries at a considerable number of locations. These records are derived from various sources, which are indicated for records other than those maintained by this Department.

As to records of the Hudson river and tributaries it can only be said at this time that they are probably more consistent than would appear from a direct comparison. In some cases where the recorded run-off per square mile at adjacent stations differs, it does not necessarily follow that either one of the records is incorrect. There are wide variations in the hydrological conditions in different portions of the upper Hudson drainage basin. For example, the topography, culture, geology and soil for the Hudson and its tributaries above North Creek are all essentially different from the corresponding features of the drainage basin of Saratoga lake outlet. The hydrological features of both the above mentioned basins are essentially different from the corresponding features of the drainage basins of the Batten kill and Hoosic river. The conditions are somewhat further complicated by diversions from the Hudson river to supply the Champlain canal through Glens Falls feeder and at Northumberland dam.

The Hudson river has been canalized for the Barge canal between Troy and Fort Edward with the exception of short distances at Stillwater and Northumberland and between the Fort Miller and Crocker's reef dams, where the canal is located on the east bank for a distance of about 2.5 miles. Four existing dams and three new ones together with the necessary dredging create a series of pools with low-water navigable surfaces at elevation referred to Barge canal datum as follows:—

Above the new Federal dam at Troy, Elev. 15.2.—The old State dam at Troy has been removed, having been replaced by the new Federal dam, completed November 18, 1915, about 1,400 feet further upstream. The old State dam was a timber crib dam with a straight fixed crest about 1,080 feet long at an elevation averaging 13.5 (12.6 M. S. L.) on which flash-boards were usually maintained to Elev. 15.2 (14.3 M. S. L.). The new dam built by the Federal Government and located at the foot of Bond street is a concrete structure of the ogee type. The crest has a broken trace and consists of two main arms, one two feet higher than the other. The east and lower section abuts on the new lock and lies across and normal to the main channel, with a crest length of 586 feet at Elev. 15.2 (14.33 M. S. L.). Provision is made in this lower crest for the use of flash-boards two feet in height. The west and higher section extends obliquely downstream to an ice-pass adjacent to the power head-gates on the west bank. The crest of the higher section is 669 feet long and at Elev. 17.2 (16.33 M. S. L.). The ice-pass, which is in line with the head-gates and parallel to the east section of the dam, provides an opening for the passage of ice, drift, etc., 25.5 feet wide, above Elev. 12.70 (11.83 M. S. L.), which will ordinarily be closed by flash-boards below crest of dam.

Above new dam No. 1, north of Waterford, Elev. 29.5.—This dam, located about 2.9 miles north of or upstream from the Waterford-Troy bridge across the Hudson river, consists of a concrete ogee crest totaling 602.5 feet at Elev. 29.5, having a broken trace made up of two arms. The one adjacent and normal to Barge canal lock No. 1 on the right, or west bank is 100 feet long, the other, 502.5 feet in length, inclines downstream, abutting on the outer end of a battery of six Taintor gates, each having a clear span of 50 feet with sills at Elev. 15.0 lying normal to the direction of stream flow.

Above the lower dam at Mechanicville, Elev. 48.0.— This is an old dam now used by the Adirondack Electric Power Corporation.

Above the upper dam at Mechanicville, Elev. 67.5.— This is the old dam now used by the West Virginia Pulp and Paper Company, also known as the Duncan dam.

Above the old dam at Stillwater, Elev. 83.5.

Above the old dam at Northumberland, Elev. 102.5.— The river above the old dam at Fort Miller is not canalized.

Above the new dam at Crocker's reef, Elev. 119.0.— This dam is a concrete structure with a straight ogee crest in two sections. The east crest is 480 feet long and the west crest is 280 feet long, a total crest length of 760 feet at Elev. 119.0. This dam has an exceptionally level crest. There are no gates or powerwheels at this location and the entire flow of the river except that portion which is utilized for canal purposes at the Fort Miller lock and in the old Champlain canal, passes over the crest of the dam.

HUDSON RIVER NEAR INDIAN LAKE

Location.— About 1 mile below the mouth of Cedar river, 1½ miles above the mouth of Indian river and 6 miles northeast of Indian Lake village, Hamilton county.

Drainage area.— 418 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— August 30, 1916, to June 30, 1918.

Gage.— Gurley printing water-stage recorder on right bank; inspected by John A. Bolton.

Discharge measurements.— Made from cable about 100 yards below gage or by wading.

Channel and control.— Solid ledge overlain with coarse gravel; probably permanent.

Extremes of discharge.— Current year: Maximum stage during year from water-stage recorder, 7.68 feet at 3 A. M., April 19; discharge, 8,050 second-feet. Minimum stage, estimated 1.56 feet on February 7; discharge, 90 second-feet.

1916–1918: Maximum stage from water-stage recorder, 9.87 feet at 11 A. M., June 12, 1917; discharge, 13,500 second-feet. Minimum stage from water-stage recorder, 1.43 feet, September 11 and 12, 1916; discharge, 56 second-feet.

Ice.— Stage-discharge relation affected by ice.

Regulation.— Large diurnal fluctuation due to logging operations during the spring months. Seasonal distribution of flow is slightly affected by storage.

Accuracy.— Stage-discharge relation practically permanent; affected by logs or ice from July through April. Rating curve fairly well defined between 75 and 600 second-feet and well defined between 600 and 6,000 second-feet. Operation of water-stage recorder satisfactory, except from December 5 to March 23, when the extreme weather conditions prevented proper operation.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of HUDSON RIVER NEAR INDIAN LAKE, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
		Feet	*Sec.-ft.*
1917			
Aug. 7	J. W. Moulton	*a* 1.72	130
Aug. 8	J. W. Moulton	*a* 1.69	111
Dec. 13 *b*	E. D. Burchard	2.52	175
1918			
Jan. 7 *b*	J. W. Moulton	2.90	111
Jan. 31 *b*	E. D. Burchard	3.07	183
Feb. 27 *b*	J. W. Moulton	4.84	851
Mar. 22 *c*	J. W. Moulton	4.97	1,070
April 3 *b*	J. W. Moulton	6.37	4,910
April 29	J. W. Moulton	4.34	1,830
April 30	E. D. Burchard	3.14	987
April 30	J. W. Moulton	3.21	1,070
June 21	J. W. Moulton	2.22	352
June 21	J. W. Moulton	2.22	338

a Logs jammed against large boulder on control.
b Measurement made through complete ice cover.
c Measurement made through partial ice cover.

Daily gage height, in feet, of HUDSON RIVER NEAR INDIAN LAKE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	4.2	1.85	2.02	....	5.6	2.36	....	3.05	4.90	5.5	....	2.08
2	4.05	1.84	2.28	2.39	5.0	2.39	....	3.10	4.85	5.8	....	.....
3	3.55	1.80	2.6	2.32	4.3	2.41	....	....	4.80	6.4	....	.....
4	3.8	1.77	2.6	2.20	3.75	2.40	....	....	....	6.2	....	.....
5	3.1	1.74	2.40	....	3.5	2.37	....	....	....	5.8	....	.....
6	3.25	1.73	2.24	2.65	3.25	....	....	....	....	5.2	....	.....
7	2.95	1.73	2.22	2.7	3.25	....	2.90	....	....	4.9	....	.....
8	2.55	1.71	2.14	2.7	3.05	....	2.95	....	....	4.75	....	.....
9	2.37	1.83	2.08	2.65	....	....	3.05	....	....	4.75	....	.....
10	2.31	1.99	2.05	2.55	....	....	....	....	....	4.65	....	.....
11	2.22	1.87	1.97	2.45	2.7	....	....	....	....	4.35	....	.....
12	2.24	1.86	1.92	2.30	....	....	....	....	....	4.05	....	.....
13	2.82	1.89	1.86	2.5	2.7	2.60	....	....	....	3.9	....	3.7
14	2.32	1.89	1.85	2.6	....	2.65	....	....	....	3.8	....	3.7
15	2.24	1.89	1.83	2.7	2.14	2.65	....	....	....	3.55	....	3.8
16	2.18	1.98	1.82	2.8	....	2.70	....	....	....	4.15	....	.....
17	2.16	2.05	1.80	3.0	....	2.80	....	....	....	4.6	....	3.0
18	2.14	2.15	1.78	2.9	2.55	....	....	....	....	5.5	2.5	2.7
19	2.11	2.05	1.78	2.75	2.55	....	....	....	....	5.45	....	2.46
20	2.06	1.98	1.82	2.85	2.7	....	....	....	....	4.85	2.35	2.29
21	2.02	1.91	2.19	3.1	2.34	....	....	....	....	4.4	....	2.23
22	2.01	1.88	2.46	3.15	2.25	....	....	....	....	4.6	2.17	2.20
23	2.23	1.85	2.28	3.0	2.27	....	....	....	5.25	6.3	....	2.17
24	2.24	1.86	2.16	2.9	2.27	....	....	....	5.6	5.0	2.05	2.19
25	2.39	2.17	2.05	3.1	2.26	....	....	....	5.6	4.15	....	2.24
26	2.55	2.09	1.93	3.2	2.19	....	....	....	5.7	4.1	2.18	2.22
27	2.37	1.94	1.86	3.15	2.52	....	....	4.85	5.5	3.30	....	2.12
28	2.14	1.86	1.86	3.3	2.39	....	....	4.90	5.3	3.7	....	2.08
29	1.97	1.85	1.87	3.4	2.32	....	....	....	5.15	5.05	....	2.06
30	1.95	1.91	1.96	....	2.39	....	....	....	5.1	4.2	2.22	2.06
31	1.88	1.96	....	6.3	....	....	3.05	....	5.35	....	....	.....

NOTE.— Stage-discharge relation affected by ice, November 23 to April 4, and by logs on the control, April 18 to 30.

Daily discharge, in second-feet, of HUDSON RIVER NEAR INDIAN LAKE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	1,880	170	237	309	3,630	260	130	100	900	3,000	4,730	295
2.....	1,720	166	358	416	2,820	280	130	95	850	3,800	2,920	1,350
3.....	1,240	152	535	379	1,990	280	130	120	800	5,000	4,050	686
4.....	1,030	142	535	319	1,420	280	120	140	750	4,800	3,170	1,320
5.....	875	133	421	366	1,200	260	120	120	700	4,400	2,030	445
6.....	990	130	339	565	990	240	120	90	650	3,430	1,450	1,140
7.....	765	130	329	595	990	240	110	80	650	3,000	1,810	884
8.....	506	123	291	595	838	220	140	85	600	2,800	2,930	1,190
9.....	405	163	263	565	568	200	120	90	600	2,800	2,400	1,530
10.....	373	224	250	506	429	200	150	100	600	2,660	2,850	3,730
11.....	329	177	216	449	595	200	180	120	650	2,280	2,210	1,280
12.....	338	174	196	368	924	190	180	150	650	1,920	2,870	1,270
13.....	379	184	174	477	595	170	200	200	1,000	1,750	1,520	1,540
14.....	379	184	170	535	355	170	220	200	1,000	1,640	2,280	1,540
15.....	338	184	168	595	291	170	220	240	1,000	1,390	2,370	1,640
16.....	310	220	159	660	582	160	280	240	900	2,040	1,890	1,400
17.....	300	250	152	800	683	160	280	240	900	2,600	1,550	890
18.....	291	296	146	730	506	160	280	280	900	3,400	530	665
19.....	277	250	146	628	506	150	280	300	900	3,200	2,750	506
20.....	254	220	159	695	595	150	280	340	900	2,400	440	405
21.....	237	192	321	875	389	150	280	380	950	1,900	1,350	372
22.....	232	181	455	912	344	150	260	440	1,100	2,200	341	356
23.....	334	170	358	800	320	150	260	500	1,400	4,600	1,260	341
24.....	339	174	300	730	280	150	260	550	1,900	2,600	280	351
25.....	416	305	250	875	280	150	240	550	2,200	1,600	1,240	378
26.....	506	268	200	950	260	150	220	600	2,400	1,600	346	367
27.....	405	204	174	912	240	140	200	850	2,400	850	1,130	315
28.....	291	174	174	1,030	240	140	170	900	2,200	1,200	522	295
29.....	216	170	177	1,110	260	130	170	......	2,200	2,800	1,410	285
30.....	208	192	212	2,290	260	130	170	......	2,200	2,100	367	285
31.....	181	212	......	4,710	......	130	130	......	2,800	......	1,420	......
Mean...	527	191	262	831	779	184	195	289	1,210	2,660	1,820	902

Discharge, November 23 to April 4, estimated, because of ice, from discharge measurements, weather records, study of gage-height graph and comparison with similar studies for Hudson river at North Creek. Discharge, April 18 to 30, estimated, because of logs on the control, by similar methods.

Monthly discharge of HUDSON RIVER NEAR INDIAN LAKE, for the year ended June 30, 1918

[Drainage area, 418 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	1,880	181	527	1.26	1.45
August	305	123	191	0.457	0.53
September	535	146	262	0.627	0.70
October	4,710	309	831	1.99	2.29
November	3,630	240	779	1.86	2.08
December	280	130	184	0.440	0.51
January	280	110	195	0.467	0.54
February	900	80	289	0.691	0.72
March	2,800	600	1,210	2.89	3.33
April	5,000	850	2,660	6.36	7.10
May	4,730	280	1,820	4.35	5.02
June	3,780	285	902	2.16	2.41
The year	5,000	80	822	1.97	26.68

of North Creek, Warren county, immediately above the mouth of North creek.

Drainage area.— 804 square miles.

Records available.— September 21, 1907, to June 30, 1918.

Gage.— Chain, at upstream side of left span of the bridge; datum unchanged; read by William Alexander.

Discharge measurements.— Made from the upstream side of the highway bridge.

Channel and control.— Heavy gravel; fairly permanent.

Extremes of discharge.— Current year: Maximum stage recorded, 7.65 feet at 6 P. M., April 3; discharge, 11,100 second-feet. Minimum stage recorded, 2.35 feet at 6 P. M., June 29; discharge, 360 second-feet.

1907–1918: Maximum stage recorded, 12.0 during the evening of March 27, 1913; discharge, about 30,000 second-feet. Minimum stage, 2.05 feet at 7:05 A. M., September 30, 1913; discharge, 169 second-feet.

Ice.— Stage-discharge relation affected by ice.

Regulation.— The numerous lakes and ponds in the basin of the upper Hudson have a decided effect on the low-water flow, especially the reservoir at Indian lake. Many of the reservoirs are used to make flood waves in the spring in connection with log-driving.

Accuracy.— Stage-discharge relation practically permanent; affected by ice from December to March, inclusive. Rating curve well defined between 250 and 6,000 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good during open-water period; fairly good during period when stage-discharge relation is affected by ice.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of HUDSON RIVER AT NORTH CREEK, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
		Feet	*Sec.-ft.*
1917			
Aug. 7	J. W. Moulton	2.74	619
Dec. 12 *a*	E. D. Burchard	4.22	899
1918			
Jan. 5 *a*	J. W. Moulton	4.40	599
Feb. 1 *b*	E. D. Burchard	4.64	626
Feb. 28 *b*	J. W. Multon	5.54	1,520
Mar. 24 *b*	J. W. Moulton	7.10	2,710
April 4	J. W. Moulton	6.22	6,880
May 2	E. D. Burchard	4.15	2,460
June 20	E. D. Burchard	2.66	583

a Measurement made through partial ice cover. *b* Measurement made through complete ice cover.

Daily gage height, in feet, of HUDSON RIVER AT NORTH CREEK, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	4.4	2.9	3.1	3.1	5.8	3.25	4.3	4.5	5.4	5.4	6.0	2.7
2	4.25	2.9	3.15	3.2	5.0	3.2	4.3	4.5	5.4	6.4	5.6	2.7
3	4.3	2.8	3.1	3.2	4.4	3.2	4.4	4.6	5.5	7.3	5.9	2.7
4	3.8	2.75	3.1	3.2	3.95	3.2	4.4	4.6	5.6	6.5	4.7	5.6
5	3.55	2.7	3.0	3.1	3.7	3.1	4.4	4.5	5.6	6.1	4.5	2.6
6	3.5	2.75	2.95	3.0	3.5	3.1	4.4	4.5	5.5	5.4	3.8	4.6
7	3.45	2.75	2.7	2.95	3.4	2.95	4.6	4.4	5.1	5.4	3.55	2.5
8	3.25	3.0	2.5	2.9	3.4	3.1	4.6	4.4	5.1	5.2	5.3	3.8
9	2.95	3.05	2.42	2.9	3.35	3.4	4.6	4.4	5.1	5.4	5.1	3.55
10	2.9	3.3	2.6	2.8	3.3	3.6	4.6	4.4	5.2	5.2	4.4	6.0
11	2.85	3.2	2.6	2.85	3.0	3.8	4.7	4.5	5.2	5.0	4.8	4.1
12	2.9	3.1	2.6	2.9	3.0	4.4	4.7	4.4	5.4	4.6	3.9	4.5
13	2.9	3.1	2.7	3.05	3.05	4.2	4.7	4.6	5.9	4.4	4.4	4.3
14	2.85	3.1	2.75	3.05	3.0	......	4.8	4.6	5.9	4.2	3.9	4.1
15	2.75	3.1	2.8	3.0	2.55	......	4.8	4.7	5.8	4.3	3.75	4.2
16	2.6	3.25	2.85	3.05	2.8	......	4.9	4.7	5.7	4.6	5.2	3.85
17	2.55	3.15	3.0	3.1	2.8	......	4.9	4.7	5.7	5.2	3.95	3.3
18	2.65	3.25	3.0	3.15	2.8	......	5.0	4.8	5.7	5.6	3.4	3.05
19	2.85	2.9	3.0	3.0	2.8	......	4.9	4.8	5.8	5.4	3.7	2.85
20	3.0	2.8	3.0	3.1	2.8	......	4.8	4.9	5.6	5.4	3.05	2.65
21	2.9	2.8	3.1	3.3	2.75	......	4.8	5.0	5.8	5.0	2.8	2.6
22	2.75	2.9	3.3	3.3	2.65	......	4.8	5.0	6.3	4.6	2.8	2.6
23	2.65	3.0	3.2	3.2	2.6	......	4.8	5.2	7.0	6.8	2.9	2.6
24	2.65	3.1	3.15	3.2	2.6	3.8	4.8	5.2	7.2	5.7	3.1	2.6
25	2.7	3.2	3.1	3.45	2.5	3.8	4.8	5.2	7.1	5.1	2.75	2.6
26	3.2	3.1	3.0	3.6	2.6	3.85	4.8	5.3	7.0	5.2	2.65	2.6
27	3.75	2.8	3.05	3.55	2.65	3.9	4.7	5.5	6.3	3.9	2.9	2.5
28	3.05	2.8	3.0	3.65	2.8	4.1	4.6	5.6	5.6	3.6	2.8	2.5
29	2.7	2.9	3.0	3.7	2.9	4.2	4.6	......	5.6	4.6	3.25	2.38
30	2.55	3.0	3.0	4.4	3.2	4.3	4.6	......	5.4	5.4	2.9	4.0
31	2.48	3.0	......	6.4	......	4.3	4.6	......	5.2	......	4.0	......

NOTE — Stage-discharge relation affected by ice, November 26 to March 28.

Daily discharge, in second-feet, of HUDSON RIVER AT NORTH CREEK, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	2,870	790	900	990	5,840	750	700	550	1,400	4,890	6,340	610
2.....	2,530	790	1,040	1,100	4,010	750	650	500	1,400	7,400	5,360	610
3.....	2,700	700	990	1,100	2,870	800	650	550	1,500	10,000	6,090	610
4.....	1,910	655	990	1,100	2,140	800	650	550	1,600	7,680	3,420	5,360
5.....	1,550	610	890	990	1,760	750	650	500	1,600	6,600	3,050	530
6.....	1,480	655	840	890	1,480	700	650	480	1,600	4,890	1,910	3,230
7.....	1,420	655	610	840	1,350	700	750	440	1,000	4,890	1,550	460
8.....	1,160	890	460	790	1,350	650	800	440	1,000	4,440	4,660	1,910
9.....	840	940	404	790	1,280	650	750	440	1,100	4,890	4,220	1,550
10.....	790	1,220	530	700	1,220	650	800	460	1,100	4,440	2,870	6,340
11.....	745	1,100	530	745	890	950	850	500	1,200	4,010	3,610	2,370
12.....	790	990	530	790	890	1,100	850	460	1,400	3,230	2,060	3,050
13.....	790	990	610	940	940	1,000	850	600	2,200	2,870	2,870	2,700
14.....	745	990	655	940	890	1,000	900	600	2,200	2,530	2,060	2,370
15.....	655	990	700	890	495	1,000	900	650	2,000	2,700	1,830	2,530
16.....	530	1,160	745	940	700	1,000	1,000	650	1,900	3,230	4,440	1,980
17.....	495	1,040	890	990	700	1,000	1,000	650	1,900	4,440	2,130	1,220
18.....	570	1,160	890	1,040	700	1,000	1,000	700	1,900	5,360	1,350	940
19.....	745	790	890	890	700	1,000	1,000	700	2,000	4,890	1,760	745
20.....	890	700	890	990	700	1,000	950	800	2,000	4,890	940	570
21.....	790	700	990	1,220	655	800	900	850	2,200	4,010	700	530
22.....	655	790	1,220	1,220	570	700	900	950	2,200	3,230	700	530
23.....	570	890	1,100	1,100	530	700	850	1,100	2,600	8,520	790	530
24.....	570	990	1,040	1,100	530	700	800	1,100	2,800	5,600	990	530
25.....	610	1,100	990	1,420	460	750	850	1,100	3,200	4,220	655	530
26.....	1,100	990	890	1,620	460	750	850	1,200	4,000	4,440	570	530
27.....	1,840	700	940	1,550	460	800	750	1,400	5,000	2,060	790	460
28.....	940	700	890	1,690	500	800	650	1,600	5,500	1,620	700	460
29.....	610	790	890	1,760	500	750	650	......	5,360	3,230	1,160	378
30.....	495	890	890	2,870	700	750	650	......	4,890	4,890	790	2,210
31.....	460	890	......	7,400	......	700	600	......	4,440	......	2,210	......
Mean...	1,060	879	830	1,340	1,210	821	800	734	2,390	4,670	2,340	1,550

NOTE.—Discharge, November 26 to March 28, estimated, because of ice, from discharge measurements, weather records, study of gage-height graph and comparison with similar estimates for Hudson River near Indian Lake.

Monthly discharge of HUDSON RIVER AT NORTH CREEK, for the year ended June 30, 1918

[Drainage area, 804 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	2,870	460	1,060	1.32	1.52
August	1,220	610	879	1.09	1.26
September	1,220	404	830	1.03	1.15
October	7,400	700	1,340	1.67	1.91
November	5,840	460	1,210	1.50	1.67
December	1,100	650	821	1.02	1.18
January	1,000	600	800	0.995	1.14
February	1,600	440	734	0.913	0.95
March	5,500	1,000	2,390	2.97	3.42
April	10,000	1,620	4,670	5.81	6.48
May	6,340	570	2,340	2.91	3.36
June	6,340	378	1,550	1.92	2.14
The year	10,000	378	1,550	1.93	26.18

HUDSON RIVER AT THURMAN

Location.— At the Delaware & Hudson Railroad bridge near the Thurman railroad station, Warren county, about ½ mile below the mouth of Schroon river and about 13 miles above the mouth of Sacandaga river.

Drainage area.— 1,550 square miles.

Records available.— September 1, 1907, to June 30, 1918.

Gage.— Chain, at upstream side near center of left span; datum unchanged; read by S. H. Spencer.

Discharge measurements.— Made from the upstream side of the bridge.

Channel and control.— Sand and gravel; fairly permanent.

Extremes of discharge.— Current year: Maximum stage recorded during year, 7.28 feet on the afternoon of April 25; discharge, 14,800 second-feet. Minimum stage recorded, 2.5 feet on the afternoon of June 30; discharge, 760 second-feet.

1907–1918: Maximum stage, 12.5 feet during the late evening of March 27, 1913, determined by leveling from flood-marks; discharge, about 46,000 second-feet. Minimum stage recorded, 2.12 feet at 8:55 A. M. and 6:20 P. M., September 30, 1913; discharge, about 290 second-feet.

Ice.— Stage-discharge relation seriously affected by ice. Discharge estimated from records at North Creek and Riverbank.

Regulation.— Discharge is regulated to some extent by the storage reservoirs at Indian lake and Schroon lake and the mills on the Schroon river.

Accuracy.— Stage-discharge relation practically permanent; affected by ice during large part of the period from December to March, inclusive. Rating curve well defined between 550 and 20,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good. Estimated results during frozen period fairly good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission. Gage heights furnished by the International Paper Company.

Discharge measurements of HUDSON RIVER AT THURMAN, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Aug. 9	J. W. Moulton	3.12	1,730
Dec. 16 [a]	J. W. Moulton and E. D. Burchard	5.16	1,570
1918			
May 3	J. W. Moulton and E. D. Burchard	5.41	8,050
June 20	J. W. Moulton	3.14	1,560

[a] Measurement made through complete ice cover.

Daily gage height, in feet, of HUDSON RIVER AT THURMAN, for the year ended June 30 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	4.2	2.85	3.0	3.05	5.4	3.1	5.3	5.4	6.1	6.4	5.1	3.35
2	4.1	2.8	3.05	3.05	4.9	3.05	5.4	......	6.0	6.6	5.3	4.0
3	4.4	2.85	3.0	3.1	4.3	3.05	......	5.1	5.9	7.1	5.1	3.4
4	3.9	2.75	2.95	3.0	4.2	3.3	5.4	......	5.9	7.1	5.0	4.3
5	3.75	2.7	3.15	3.1	4.0	3.0	5.4	5.2	6.0	6.7	4.5	2.65
6	3.75	2.7	3.15	3.1	3.85	3.1	5.4	5.2	6.0	6.3	4.4	3.1
7	3.75	2.7	3.05	2.9	3.75	......	5.9	5.2	5.6	6.2	4.1	3.0
8	3.4	2.8	3.0	3.0	3.7	3.05	5.8	5.1	5.6	5.9	4.7	2.9
9	3.4	2.95	2.7	2.8	3.55	4.1	5.7	5.1	5.5	6.0	4.4	3.0
10	3.3	3.2	2.9	2.75	3.3	4.5	......	5.1	5.6	6.0	4.6	4.4
11	3.05	3.1	2.9	2.6	3.2	4.5	5.7	5.2	5.8	5.7	4.6	4.0
12	3.05	3.0	2.9	2.8	3.3	4.4	5.7	5.2	5.7	5.3	4.8	3.8
13	3.05	3.0	2.9	2.95	3.4	4.7	5.2	5.1	6.0	5.3	4.4	4.4
14	2.9	2.95	2.85	3.05	3.2	4.7	4.9	......	6.2	5.2	5.0	4.2
15	2.85	3.1	2.8	3.05	3.2	4.8	5.0	5.1	6.1	5.0	5.5	4.2
16	2.8	3.15	2.85	2.95	3.3	4.6	5.3	5.1	6.0	5.3	4.7	4.1
17	2.75	3.05	3.0	3.05	3.35	5.6	5.2	5.1	5.6	5.2	4.2	3.6
18	2.8	2.95	2.95	3.15	3.3	5.7	5.0	......	6.0	5.4	4.1	3.5
19	2.85	2.95	3.05	3.0	3.15	6.1	......	......	6.0	6.4	4.0	3.4
20	3.05	2.9	2.95	2.95	3.15	5.9	5.2	5.5	5.9	5.4	3.95	3.25
21	3.05	2.7	3.05	3.05	3.2	5.6	5.3	5.5	6.2	5.7	3.9	3.2
22	2.95	2.7	3.2	3.3	3.05	5.4	......	......	6.6	5.3	3.7	3.4
23	2.85	2.85	3.15	3.25	3.05	......	......	5.7	7.1	6.3	3.55	2.9
24	2.7	3.1	3.1	3.05	3.05	......	......	5.9	7.1	5.9	3.45	2.9
25	2.85	3.0	3.1	3.3	2.95	5.3	5.2	6.0	7.0	4.9	4.1	3.15
26	2.8	3.0	3.0	3.45	2.8	4.7	......	6.1	7.1	5.2	3.1	3.1
27	3.2	2.85	2.95	3.4	2.75	5.1	5.1	6.3	6.9	4.6	3.3	3.15
28	3.1	2.7	3.0	3.45	2.65	5.3	5.2	6.4	6.4	4.5	3.45	3.0
29	2.75	2.85	2.85	3.55	3.15	5.3	5.3	......	6.1	5.8	4.2	3.0
30	2.65	3.0	2.95	4.0	3.4	5.2	5.4	......	5.8	5.7	3.4	2.55
31	2.6	2.95	......	5.7	......	5.3	5.1	......	5.4	......	4.5	......

NOTE.— Stage-discharge relation affected by ice, December 9 to March 31, and by logs on the control, June 25 to 30.

Daily discharge, in second-feet, of HUDSON RIVER AT THURMAN, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	4,140	1,150	1,380	1,460	7,760	1,550	......	......	......	11,400	6,780	2,040
2.....	3,860	1,080	1,460	1,460	6,170	1,460	......	......	......	12,100	7,430	3,590
3.....	4,710	1,150	1,380	1,550	4,420	1,460	......	......	......	14,100	6,780	2,150
4.....	3,330	1,020	1,300	1,380	4,140	1,940	......	......	......	14,100	6,470	4,420
5.....	2,960	960	1,640	1,550	3,590	1,380	......	......	......	12,500	5,000	950
6.....	2,960	960	1,640	1,550	3,200	1,550	......	......	......	11,000	4,710	1,550
7.....	2,960	960	1,460	1,220	2,960	1,500	......	......	......	10,600	3,860	1,380
8.....	2,150	1,080	1,380	1,380	2,840	1,460	......	......	......	9,500	5,580	1,220
9.....	2,150	1,300	960	1,080	2,480	1,400	......	......	......	9,860	4,710	1,380
10.....	1,940	1,740	1,220	1,020	1,940	1,500	......	......	......	9,860	5,290	4,710
11.....	1,460	1,550	1,220	850	1,740	1,600	......	......	......	8,790	5,290	3,590
12.....	1,460	1,380	1,220	1,080	1,940	1,800	......	......	......	7,430	5,870	3,080
13.....	1,460	1,380	1,220	1,300	2,150	1,800	......	......	......	7,430	4,710	4,710
14.....	1,220	1,300	1,150	1,460	1,740	1,700	......	......	......	7,100	6,470	4,140
15.....	1,150	1,550	1,080	1,460	1,740	1,600	......	......	......	6,470	8,100	4,140
16.....	1,080	1,640	1,150	1,300	1,940	1,600	......	......	......	7,430	5,580	3,860
17.....	1,020	1,460	1,380	1,460	2,040	1,500	......	......	......	7,100	4,140	2,600
18.....	1,080	1,300	1,300	1,640	1,940	1,500	......	......	......	7,760	3,860	2,370
19.....	1,150	1,300	1,460	1,380	1,640	1,500	......	......	......	11,400	3,590	2,150
20.....	1,460	1,220	1,300	1,300	1,640	1,400	......	......	......	7,760	3.460	1,840
21.....	1,460	960	1,460	1,460	1,740	1,400	......	......	......	8,790	3,330	1,740
22.....	1,300	960	1,740	1,940	1,460	1,200	......	......	......	7,430	2,840	2,150
23.....	1,150	1,150	1,640	1,840	1,460	1,100	......	......	......	11,000	2,480	1,220
24.....	960	1,550	1,550	1,460	1,460	1,100	......	......	......	9,500	2,260	1,220
25.....	1,150	1,380	1,550	1,940	1,300	1,100	......	......	......	6.170	3,860	1,640
26.....	1,080	1,380	1,380	2,260	1,080	1,100	......	......	......	7.100	1,550	1,550
27.....	1,740	1,150	1,300	2,150	1,020	1,100	......	......	......	5,290	1,940	1,640
28.....	1,550	960	1,380	2,260	905	1,100	......	......	......	5.000	2,260	1,380
29.....	1,020	1,150	1,150	2,480	1,640	1,100	......	......	......	9,140	4,140	1,380
30.....	905	1,380	1,300	3,590	2,150	1,100	......	......	......	8,790	2.150	805
31.....	850	1,300	......	8,790	......	1,000	......	......	......	......	5,000	......
Mean...	1,830	1,250	1,360	1,840	2,410	1,410	1,160	940	3,620	9.060	4,500	2.330

NOTE.— Discharge, December 9 to 31, estimated, because of ice, from discharge of Hudson river, North creek, Schroon river at Riverbank and an estimated inflow below, these stations.

Monthly discharge of HUDSON RIVER AT THURMAN, for the year ended June 30, 1918.

[Drainage area, 1,550 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July..............................	4,710	805	1,830	1.18	1.36
August..............................	1,740	960	1,250	0.806	0.93
September..............................	1,740	960	1,360	0.877	0.98
October..............................	8,790	850	1,840	1.19	1.37
November..............................	7,760	905	2,410	1.55	1.73
December..............................	1,940	1,000	1,410	0.910	1.05
January..............................	....	....	1,160	0.748	0.86
February..............................	....	....	940	0.606	0.63
March..............................	....	....	3,620	2.34	2.70
April..............................	14,100	5,000	9,060	5.85	6.53
May..............................	8,100	1,550	4,500	2.90	3.34
June..............................	4,710	805	2,330	1.50	1.67
The year..............................	14,100	805	2,640	1.70	23.15

This station was established October 1, 1906, and is maintained in coöperation with the United States Weather Bureau. It is located at the mouth of Sturdevant creek on the right bank of the Hudson river about ¼ mile upstream from the highway bridge across the Hudson river in the village of Corinth.

On June 26, 1917, a standard Type A gage, No. 129, was secured to the north abutment of an abandoned highway bridge at the mouth of the creek, replacing the gage secured to the south abutment of the same bridge. The gage has a range of 14 feet and the datum is arbitrary.

It is read twice daily — at about 8 A. M. and 5 P. M.— to tenths.

Daily gage height, in feet, of HUDSON RIVER AT CORINTH, for the year ended June 30, 1918. E. H. Bowker, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	4.0	1.9	2.4	1.65	5.3	2.05	1.9	1.4	3.2	5.1	3.75	2.1
2	4.3	1.8	2.7	1.7	4.9	2.1	1.8	1.4	3.35	6.25	4.3	2.05
3	4.0	1.8	2.8	1.85	4.5	2.1	1.8	1.4	3.4	7.05	3.95	1.85
4	3.65	1.8	2.55	2.05	3.9	2.1	1.75	1.4	3.4	7.4	3.9	1.65
5	3.15	2.0	2.2	2.15	3.5	2.0	1.7	1.3	3.4	6.6	3.55	1.5
6	2.95	2.0	2.05	2.1	3.1	2.0	1.7	1.3	3.25	5.95	3.05	1.25
7	2.6	2.0	1.7	1.85	2.55	1.75	1.8	1.2	3.05	5.65	2.9	1.55
8	2.5	2.1	1.3	1.7	2.25	1.55	1.8	1.2	3.0	5.3	2.8	2.25
9	1.95	2.2	1.5	1.6	2.2	1.65	1.8	1.2	3.0	5.6	2.8	2.8
10	1.8	2.35	1.6	1.75	2.2	1.8	1.8	1.2	2.85	5.55	2.9	3.2
11	1.8	2.25	1.6	1.7	2.2	2.0	1.8	1.2	2.5	5.35	3.0	2.4
12	1.7	2.2	1.7	1.85	2.2	2.0	1.8	1.2	2.3	5.0	2.9	2.15
13	2.3	2.05	1.85	2.0	2.05	2.1	1.8	1.2	2.6	4.65	2.75	2.45
14	2.4	2.0	2.05	2.15	1.85	2.05	1.75	1.2	2.95	4.35	3.65	2.6
15	2.15	2.0	1.7	2.25	1.95	2.0	1.65	1.2	3.0	4.1	3.9	2.55
16	2.0	1.9	2.0	2.3	2.15	2.0	1.55	1.3	3.0	4.15	3.75	2.1
17	2.0	1.8	2.0	2.1	2.35	2.0	1.5	1.3	3.1	4.2	3.6	1.75
18	2.0	1.7	2.0	1.9	2.25	2.0	1.5	1.3	3.15	4.6	3.5	1.55
19	2.2	1.7	1.9	1.75	1.95	2.0	1.5	1.45	3.4	5.2	3.2	1.55
20	2.2	1.7	1.8	1.7	1.75	2.0	1.5	1.6	3.7	4.75	2.7	1.75
21	2.15	1.8	1.95	1.8	1.95	2.0	1.5	1.7	4.0	4.9	2.15	1.7
22	2.1	1.8	2.0	1.8	2.2	2.15	1.5	1.8	4.5	5.0	2.15	1.7
23	2.0	1.7	1.9	1.9	2.45	2.2	1.5	1.8	4.7	5.25	1.95	1.4
24	2.0	1.6	1.9	2.0	2.5	2.2	1.5	1.8	4.55	5.1	1.75	0.1
25	2.0	1.9	1.8	2.45	2.5	2.2	1.5	2.1	4.35	4.7	1.55	0.75
26	2.0	2.0	1.8	2.9	2.5	2.2	1.5	2.5	4.45	4.3	1.5	0.65
27	2.1	1.9	1.7	2.9	2.35	2.2	1.45	2.9	4.4	3.6	1.5	—0.55
28	2.2	2.05	1.7	3.5	2.2	2.1	1.4	3.15	4.15	3.4	1.65	—0.4
29	1.7	2.3	1.55	4.25	2.35	2.0	1.4	......	4.15	3.4	1.8	—0.4
30	1.3	2.3	1.5	4.95	2.25	1.9	1.4	......	4.35	3.4	1.9	—0.4
31	1.5	2.25	......	5.5	......	1.85	1.4	......	4.85	......	2.05	......

HUDSON RIVER AT SPIER FALLS

Location.— One-half mile below the Spier Falls dam, Saratoga county, and 11½ miles below the mouth of Sacandaga river.

Drainage area.— 2,800 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— October 7, 1912, to June 30, 1918.

Gage.— Gurley 2-day water-stage recorder located in a brick shelter on the right bank about ½ mile below the Spier Falls dam. Recorder inspected by R. F. Malone, chief operator of power-plant.

Discharge measurements.— Made from a cable about 1,000 feet downstream from the gage.

Channel and control.— Coarse gravel and boulders; probably permanent.

Extremes of discharge.— Current year: Maximum stage from water-stage recorder, 12.16 feet at 8 A. M., April 4; discharge, 34,500 second-feet. Minimum stage from water-stage recorder, 0.13 foot at 9 A. M., September 23; discharge, 14 second-feet.

1912–1918: Maximum stage from water-stage recorder, 18.59 feet at 12:25 A. M., March 28, 1913; discharge, 89,100 second-feet. Minimum stage recorded during discharge measurement, September 15, 1912, gage height, 0.06 foot; discharge, 5.7 second-feet, power-plant being shut down at this time and the flow of the river being stored in its pond.

Ice.— Stage-discharge relation not affected by ice except during extremely cold periods.

Regulation.— Large diurnal fluctuation in discharge, due to the operation of the Spier Falls power-plant. Seasonal flow affected by storage at Indian lake and many small lakes and reservoirs in the upper part of the drainage.

Accuracy.— Stage-discharge relation practically permanent; affected by ice during January and February. Rating curve well defined for all stages except about 9 feet, where the rating may be 4 or 5 per cent large. Operation of the water-stage recorder satisfactory throughout the year. Daily discharge ascertained by averaging the results obtained by applying gage heights for one-hour intervals to rating table. Results good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission. Water-stage recorder inspected by an employee of the Adirondack Electric Power Corporation.

Discharge measurements of HUDSON RIVER AT SPIER FALLS, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1918		*Feet*	*Sec.-ft.*
Jan. 3 *a*	J. W. Moulton	2.84	1,150
Feb. 2 *b*	E. D. Burchard	2.85	1,400
June 18	J. W. Moulton	4.67	4,990

a Measurement made through complete ice cover.
b Measurement made through partial ice cover.

Daily discharge, in second-feet, of HUDSON RIVER AT SPIER FALLS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	8,490	1,360	1,930	1,930	17,700	3,160	1,390	1,330	5,780	21,500	13,500	5,200
2	8,640	1,810	906	1,780	15,200	1,020	1,820	2,000	5,350	22,900	13,800	3,800
3	8,330	2,260	1,220	1,470	12,600	2,720	1,480	1,240	5,100	31,400	12,600	4,570
4	6,140	1,150	2,740	1,860	10,200	1,960	1,480	1,380	4,860	32,300	13,200	3,750
5	5,220	506	2,060	1,940	8,350	2,220	1,770	1,620	4,750	27,900	11,400	3,870
6	4,420	1,950	2,260	2,680	6,950	2,090	727	1,730	4,900	24,200	8,780	2,840
7	4,050	1,330	2,670	1,510	5,840	2,310	1,760	1,460	4,340	21,700	7,830	3,400
8	3,520	831	2,500	1,860	5,160	2,110	1,540	1,350	3,770	20,100	8,320	3,470
9	3,720	1,500	1,010	1,810	4,560	610	1,330	1,650	3,130	21,800	9,600	4,010
10	2,720	2,240	1,240	1,600	3,600	1,530	1,300	661	3,090	22,200	10,200	6,500
11	2,230	2,200	947	1,640	3,370	1,580	1,430	1,460	3,860	21,100	10,200	6,570
12	2,630	1,650	1,480	1,630	4,140	1,780	1,440	1,160	2,850	18,900	8,660	4,900
13	2,490	2,240	1,500	2,030	3,350	2,130	1,700	1,430	2,770	16,700	9,190	6,700
14	2,520	1,660	1,440	1,940	2,980	2,490	1,460	1,380	3,660	14,800	12,800	6,990
15	2,420	1,930	1,720	3,250	2,880	2,060	1,310	1,730	4,140	14,000	15,100	6,460
16	2,870	1,980	1,050	2,920	3,040	2,110	1,920	1,660	3,560	14,300	13,400	5,720
17	2,250	2,290	1,540	2,990	2,910	2,030	1,840	1,490	3,230	15,200	11,700	4,680
18	2,000	1,980	1,600	3,020	2,160	2,450	1,780	1,850	4,290	17,200	9,730	3,930
19	2,000	1,260	1,500	2,630	3,280	2,180	1,690	1,790	4,750	20,100	8,280	3,550
20	2,330	1,900	1,940	2,760	2,520	2,170	1,050	2,400	5,620	19,000	8,440	3,170
21	2,000	1,320	1,700	2,280	2,450	2,480	1,890	2,900	7,030	17,200	6,360	2,840
22	2,060	1,360	2,360	4,080	2,260	2,580	1,790	3,150	9,230	18,200	6,210	2,420
23	2,720	1,560	909	3,270	3,270	1,170	1,730	3,810	12,500	19,400	4,860	1,830
24	1,900	2,220	970	2,770	3,470	1,990	1,660	4,140	13,500	20,100	5,100	2,970
25	1,530	2,550	1,710	3,240	2,670	1,820	1,660	4,220	15,200	16,300	3,870	2,530
26	1,560	1,010	1,490	4,020	2,990	1,870	2,150	4,480	16,200	16,100	4,310	2,390
27	2,080	2,620	1,890	4,280	2,010	2,290	740	5,490	15,700	12,600	4,040	2,100
28	2,770	1,560	1,720	4,130	2,490	1,980	2,170	6,150	14,800	11,800	4,610	2,030
29	1,420	1,360	1,320	5,070	1,130	2,070	1,690	......	15,100	10,800	4,230	1,720
30	1,490	2,000	1,000	10,200	2,510	1,140	1,820	......	16,700	13,400	4,440	1,490
31	1,160	2,250	......	17,200	......	3,060	1,480	......	18,300	......	5,200	......
Mean	3,220	1,740	1,610	3,350	4,870	2,040	1,580	2,320	7,360	19,100	8,710	3,880

NOTE.— Discharge, January 1 to February 15, determined, because of ice, by comparison with records from the power-plant.

Monthly discharge of HUDSON RIVER AT SPIER FALLS, for the year ended June 30, 1918

[Drainage area, 2,800 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	8,640	1,160	3,220	1.15	1.33
August	2,620	*a* 506	1,740	0.621	0.72
September	2,740	*a* 906	1,610	0.575	0.64
October	17,200	1,470	3,350	1.20	1.38
November	17,700	1,130	4,870	1.74	1.94
December	3,160	*a* 610	2,040	0.729	0.84
January	2,170	*a* 727	1,580	0.644	0.74
February	6,150	*a* 661	2,320	0.829	0.86
March	18,300	2,770	7,360	2.63	3.03
April	32,300	10,800	19,100	6.82	7.61
May	15,100	3,870	8,710	3.11	3.58
June	6,990	1,490	3,880	1.39	1.55
The year	32,300	*a* 506	4,980	1.78	24.22

a Sunday.

HUDSON RIVER AT VARNEY FARM, ABOVE GLENS FALLS

This station, established January 27, 1914, is located on the left bank of the Hudson river about 3 miles upstream from the feeder dam at Glens Falls. The gage, originally a vertical staff attached to a pine tree about 800 feet north of the fence running toward the river from the barn on the Varney farm, was replaced in November, 1916, by a standard Type A gage, having a range of 12 feet, between elevations 281.0 and 293.0. A nail was driven in the tree at elevation 290.0 (B. C. datum) for a reference point.

The gage is read twice daily — morning and afternoon — to tenths, except from January 5 to 20, when one reading daily was taken.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER AT VARNEY FARM, ABOVE GLENS FALLS, for the year ended June 30, 1918. W. D. Barber and Henry B. Palmer, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	284.9	282.95	283.95	283.45	288.3	284.2	282.55	281.1	284.75	*a*	285.6	283.3
2.....	285.0	283.3	281.3	283.85	287.8	282.8	282.8	281.3	284.6	288.75	286.4	283.3
3.....	284.7	283.9	284.5	283.45	287.1	283.4	282.45	280.95	283.95	289.75	285.6	283.45
4.....	284.3	283.5	285.45	282.45	286.45	282.55	282.05	280.8	283.7	289.95	285.65	283.7
5.....	283.8	282.7	284.35	282.25	286.25	282.1	281.4	280.9	283.5	289.15	285.9	283.6
6.....	283.4	283.5	283.8	282.2	285.9	282.2	281.2	280.65	283.4	288.4	285.05	282.85
7.....	282.65	283.5	283.7	281.9	285.8	281.6	281.0	281.05	283.15	287.85	284.85	282.6
8.....	283.1	283.1	284.35	281.9	284.5	281.55	280.6	280.75	283.15	287.6	285.2	282.85
9.....	282.95	282.35	283.7	282.15	283.7	281.45	280.35	280.65	283.05	287.9	284.85	283.45
10.....	282.1	284.0	283.65	281.75	282.8	281.85	280.3	280.55	283.65	288.0	285.4	284.85
11.....	283.55	284.4	282.5	282.05	283.2	281.65	280.4	281.05	283.4	287.8	285.5	......
12.....	284.75	284.0	282.3	282.2	285.2	281.65	280.3	280.75	283.3	287.3	285.05	......
13.....	283.05	284.7	282.85	282.2	283.05	281.55	280.4	280.6	284.25	286.8	285.2	......
14.....	283.0	283.8	282.85	282.8	282.75	281.7	281.0	280.65	283.55	286.35	286.2	......
15.....	283.0	283.45	282.65	284.0	282.75	282.45	280.6	280.55	283.55	286.35	287.0	......
16.....	284.25	283.6	283.8	283.7	282.65	282.75	280.7	280.25	283.15	286.4	286.65	......
17.....	283.2	284.2	284.0	283.85	283.0	282.65	280.6	281.05	283.85	286.4	285.8	......
18.....	282.4	284.7	283.95	283.65	282.65	283.2	280.6	281.05	284.2	286.4	285.6	......
19.....	283.35	283.6	283.95	283.35	284.05	283.55	280.4	281.4	284.25	287.4	285.4	......
20.....	283.1	284.65	283.7	282.9	283.0	283.65	280.5	281.75	284.85	287.2	285.65	......
21.....	283.7	284.35	284.25	282.95	282.45	284.2	281.0	283.3	285.05	286.65	284.85	......
22.....	282.5	283.35	284.75	285.3	282.4	284.35	280.95	284.65	285.55	287.1	284.9	......
23.....	284.25	283.35	284.4	283.05	283.2	282.6	281.05	284.25	286.0	287.25	284.5	......
24.....	283.7	284.0	284.1	283.05	283.3	282.4	280.85	284.7	286.55	287.85	284.35	......
25.....	282.85	284.6	283.7	282.0	282.65	282.3	281.0	284.75	286.9	286.8	284.1	......
26.....	282.35	283.1	282.75	283.05	283.15	282.6	281.1	284.5	287.2	286.9	284.45	......
27.....	282.85	285.2	282.7	283.7	282.2	282.5	281.3	284.85	288.15	285.75	283.9	281.8
28.....	284.8	284.5	282.65	283.25	281.9	282.8	281.15	284.55	287.9	285.6	283.75	281.3
29.....	284.5	288.7	282.8	284.15	281.75	282.1	281.05	......	*a*	285.5	283.35	281.35
30.....	284.05	283.55	282.05	286.05	282.35	*a*	280.85	......	*a*	285.75	283.65	281.15
31.....	283.45	284.5	......	287.65	......	*a*	281.05	......	*a*	......	283.35	......

a No record.

NOTE.— Gage destroyed by ice, March 29; replaced April 2. Water below gage, June 10 to 26, inclusive. January 5 to 20, one reading, daily.

HUDSON RIVER AT GLENS FALLS

This station, located above the feeder dam at Glens Falls, was established March 9, 1905, and is maintained in coöperation with the U. S. Weather Bureau. A vertical staff on crib near left bank about 500 feet above dam is read to tenths twice daily — at 8 A. M. and 5 P. M. (December–February, 8 A. M. and 4 P. M.).

In connection with the enlargement of the Glens Falls feeder to supply the summit level of the Champlain branch of the Barge canal system the feeder dam was reconstructed. A new concrete structure with an ogee crest at elevation 282.0 and 615 feet in length, including a logway 20 feet wide at elevation 280.0 with provision for flash-boards to crest, was built immediately below the old timber-crib dam, which had a very irregular crest averaging elevation about 281.0 and being about 618 feet long. There are large bulkheads for power purposes at each end of the dam.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER ABOVE FEEDER DAM AT GLENS FALLS, for the year ended June 30, 1918. A. B. Fisher, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	284.05	284.55	284.1	283.25	287.6	284.0	281.7	280.9	284.4	287.4	285.15	283.1
2.....	284.20	283.25	281.95	283.65	287.25	282.55	280.1	280.5	284.25	287.0	285.60	282.4
3.....	284.1	284.75	284.7	283.5	286.8	283.8	281.95	280.35	284.15	287.45	285.15	282.9
4.....	283.8	284.25	285.45	282.6	286.3	282.4	281.6	280.6	284.1	287.65	285.45	282.35
5.....	283.2	282.7	284.35	282.35	285.85	281.2	281.25	280.95	284.0	286.95	285.05	282.6
6.....	282.75	283.75	283.75	282.35	285.8	281.8	280.45	280.65	284.1	286.65	284.7	282.15
7.....	282.05	283.6	283.85	282.3	285.4	281.75	280.75	280.55	283.6	286.3	284.6	282.1
8.....	281.95	283.0	284.45	281.8	284.6	282.05	280.4	280.45	283.1	286.15	284.5	282.15
9.....	282.8	281.95	283.8	282.15	284.05	282.4	280.45	280.35	282.7	286.35	284.9	282.8
10.....	282.15	283.7	283.75	281.5	282.75	282.05	281.3	280.15	283.0	286.5	285.15	283.05
11.....	283.5	284.45	282.45	282.1	283.9	281.85	281.35	280.3	283.3	286.25	285.0	283.4
12.....	284.8	283.65	282.3	282.0	285.15	282.05	281.25	280.5	282.15	286.1	284.85	283.15
13.....	283.2	285.45	282.9	282.2	283.3	282.15	280.95	280.65	282.05	285.8	285.05	283.55
14.....	282.95	284.35	282.75	282.15	283.25	283.65	282.15	281.15	282.8	285.5	285.4	283.85
15.....	283.0	283.95	282.55	284.8	282.6	283.85	281.9	281.25	283.25	285.45	285.8	283.65
16.....	283.95	284.05	283.55	283.8	283.05	282.85	280.75	282.05	282.8	285.25	285.7	283.35
17.....	283.15	284.05	284.05	283.85	283.25	283.75	281.85	281.75	282.25	285.5	285.35	283.2
18.....	282.95	284.6	284.0	283.6	282.4	283.0	282.15	281.9	283.6	285.7	284.95	282.9
19.....	283.2	283.55	283.9	283.5	284.45	283.5	281.35	282.55	284.0	286.1	284.7	282.55
20.....	283.1	284.35	283.9	282.6	283.05	282.95	280.5	282.85	283.25	286.6	284.95	282.5
21.....	284.0	284.25	284.1	282.35	282.5	283.65	281.45	283.2	284.7	285.65	284.3	283.4
22.....	282.7	283.1	284.7	285.3	282.6	284.3	281.45	284.75	285.3	285.95	284.35	283.5
23.....	284.65	283.2	284.25	282.95	283.35	282.25	281.35	285.15	285.9	285.9	283.95	281.75
24.....	283.6	283.75	284.15	283.4	283.2	282.5	281.8	284.8	285.95	286.3	284.2	284.25
25.....	282.6	285.15	283.8	282.5	283.4	282.5	281.25	285.2	286.6	285.8	283.75	283.1
26.....	282.65	283.45	283.0	283.35	282.6	282.2	282.5	284.65	286.85	285.55	283.7	282.9
27.....	282.7	285.15	282.6	283.65	281.4	282.6	282.0	284.55	287.05	285.3	283.75	282.0
28.....	284.95	284.65	282.45	283.1	282.35	282.9	281.9	284.45	286.55	285.3	283.35	281.65
29.....	284.0	283.55	282.7	283.95	282.75	282.85	280.95	......	286.25	284.95	282.8	281.7
30.....	284.65	283.3	282.6	285.7	281.8	282.35	280.95	......	286.2	285.25	283.1	281.65
31.....	284.25	284.75	......	287.4	......	282.2	281.15	......	286.15	......	282.85	......

HUDSON RIVER AT TERMINAL, FORT EDWARD

This station was originally established as "Hudson river at Bridge street, Fort Edward" and so maintained from April 11, 1904, to November 14, 1915, when it was discontinued and a new record begun at the Fort Edward canal terminal, about 550 feet farther upstream. A staff gage on the lower return of the terminal wall was replaced in November, 1916, by a standard Type A gage, No. 119, in two sections, having a range of 16 feet, the lower section, between elevations 119.0 and 127.0, being attached to the lower return of the terminal wall, and the upper section, between elevations 127.0 and 135.0, being attached to a barn a short distance back of the terminal wall. A standard bench-mark plug is set in the wall near the lower section at elevation 126.0 (B. C. datum).

The gage is read twice daily — at 8 A. M. and 5 P. M. — to half-tenths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER AT TERMINAL, FORT EDWARD, for the year ended June 30, 1918. F. H. Wells, Observer.

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	121.85	119.80	120.85	120.70	125.00	121.08	120.80	120.62	122.32	125.18	123.00	121.45
2.....	122.18	119.70	120.80	120.88	124.45	120.92	120.70	120.62	122.45	126.45	123.70	120.48
3.....	121.85	119.90	120.57	120.80	123.85	120.42	120.70	120.62	122.10	127.68	123.00	120.92
4.....	121.45	120.02	120.85	120.90	123.08	120.85	120.60	120.68	122.05	127.90	123.42	120.72
5.....	121.20	119.78	121.05	120.92	122.75	120.60	120.55	120.62	121.80	127.10	122.75	120.65
6.....	121.00	119.60	121.10	121.08	122.25	120.75	120.40	120.62	121.75	126.28	122.12	120.48
7.....	120.78	119.75	120.95	120.78	122.05	120.75	120.60	120.62	121.70	125.40	121.88	120.45
8.....	120.40	119.90	120.95	120.92	121.78	120.92	120.80	120.62	121.45	125.10	121.85	120.50
9.....	120.62	119.88	120.70	120.88	121.65	120.70	120.65	120.55	121.60	125.15	122.22	120.75
10.....	120.28	119.90	120.75	120.88	121.40	120.40	120.65	120.65	121.65	125.65	122.55	120.88
11.....	120.00	120.00	120.62	120.72	121.60	120.40	120.60	120.68	121.40	125.20	122.45	121.80
12.....	120.18	119.92	120.65	120.80	121.55	120.50	120.75	120.75	121.10	124.90	122.12	121.15
13.....	120.30	119.85	120.72	120.90	121.20	120.60	120.50	120.72	121.05	124.40	122.40	121.25
14.....	120.28	120.10	120.80	120.75	121.40	121.00	120.60	120.72	121.22	123.80	122.72	121.62
15.....	119.90	120.05	120.72	121.15	121.00	120.95	120.55	120.72	121.60	123.50	123.60	121.40
16.....	120.25	120.02	120.65	121.50	121.25	120.80	120.60	120.68	122.30	123.48	123.55	121.20
17.....	120.80	119.92	120.60	121.20	121.10	120.95	120.55	120.62	121.65	123.75	123.05	121.15
18.....	120.05	122.08	120.80	121.38	120.85	120.65	120.50	120.68	121.88	124.38	122.50	120.75
19.....	120.05	120.28	120.68	121.42	120.95	120.85	120.60	120.72	122.20	124.60	121.80	120.50
20.....	119.95	120.62	120.78	121.28	121.02	120.85	120.55	120.75	122.50	124.42	122.35	120.48
21.....	120.08	120.80	120.80	121.45	120.95	120.80	120.60	120.70	122.80	124.08	121.45	120.32
22.....	119.98	120.80	120.80	121.90	120.95	120.95	120.65	120.68	123.50	124.58	121.38	120.38
23.....	119.92	120.75	120.75	121.60	121.18	121.10	120.60	120.68	124.30	124.50	121.05	120.00
24.....	120.25	120.72	120.80	121.40	121.38	120.75	120.68	120.75	124.50	125.42	121.05	120.00
25.....	120.02	120.95	120.88	121.20	120.85	120.65	120.55	120.92	124.75	124.32	120.75	120.48
26.....	119.82	120.90	120.85	121.28	121.10	120.65	120.68	121.82	124.50	123.88	120.75	120.25
27.....	119.70	120.50	120.95	121.75	121.02	120.65	120.60	121.80	124.20	123.46	120.88	120.28
28.....	119.95	121.10	120.82	121.55	121.55	120.75	120.68	122.42	123.95	124.12	120.98	120.05
29.....	119.85	120.75	120.78	121.88	120.68	120.80	120.70	......	123.95	122.58	120.80	120.02
30.....	119.80	120.75	120.48	123.15	120.48	120.55	120.62	......	124.30	123.05	120.85	119.65
31.....	119.82	120.78	......	124.70	......	120.60	120.62	......	124.00	......	120.85	......

HUDSON RIVER AT CROCKER'S REEF DAM

Location.—At Crocker's reef dam across the Hudson river at the head of Thompson island about 6 miles below Fort Edward and about 2.2 miles above the dam at Fort Miller.

Drainage area.— 2,959 square miles.

Records available.— Water-surface elevations, April 11, 1904, to June 30, 1918. Discharge, September 1, 1907, to June 30, 1918. Dam completed, August 27, 1907.

Gage.— The original gage was attached to an elm tree about 450 feet above the dam, on the east bank of the river. On July 17, 1915, a staff gage was located on the east side of the north end of the pier at the guard-gate and used until November, 1916, when it was replaced by a standard Type A gage, No. 118, which has a range of 12 feet, between elevations 118.0 and 130.0. A standard bench-mark plug is set in the pier near the gage at elevation 130.0 (B. C. datum). This gage indicates water-surface elevations practically equivalent to that at junction of canal and river, about 2,500 feet above, and is read twice daily to tenths and published in the accompanying table. From January 8, 1916, to November 30, 1916, the old gage on the elm tree was read once daily simultaneously with a third reading of the guard-gate gage.

Discharge computations.—Discharge estimates are based on theoretical computations, using a varying coefficient and correcting for submergence. Velocity of approach has not been allowed for, as it was assumed that the surface slope from the gage to the dam would be approximately equivalent to the head due to velocity of approach.

Control.— Crest of dam at elevation 119.0, 760 feet long in two straight sections separated by head of island — the east, 480 feet, and the west, 280 feet in length. The dam is of concrete with an ogee crest carefully troweled to a uniform level for use as a gaging weir. This dam is free from gates or power-wheels. During higher stages the dam is submerged by backwater from the dam at Fort Miller.

Extremes of discharge.—Current year: Maximum stage recorded, elevation 125.2 at guard-gate on April 4 at 5:00 P. M.; discharge, 28,100 second-feet. As the exact date on which flash-boards were carried out is not known, the minimum stage is not determined.

1907–1918: Maximum stage recorded, elevation 129.56 on March 28, 1913, at 4 P. M.; discharge, 72,800 second-feet. A considerably higher stage is believed to have been reached earlier in the day. The 8:00 A. M. reading was not made. Minimum stage recorded, elevation 119.26 on June 19, 1913, at 7:00 A. M. and 5 P. M.; discharge, 280 second-feet.

Diversion.— During the navigation season water is diverted above this station to supply the new Barge canal lock at Fort Miller. Except for the above the entire flow of the Hudson river passes over the dam.

Regulation.— Daily flow affected somewhat by local storage above power dams at Fort Edward and Glens Falls.

Accuracy.— Discharge for current year has been reduced upon the same basis as used in former years. Allowance for submergence has been based upon estimated water-surface below the dam, and actual conditions as observed indicate that with about three feet of water over the dam there is somewhat more submergence than has been allowed. From July 26, 1915, to January 8, 1916, and since December 1, 1916, a correction, varying with the gage height, has had to be applied to records obtained at the guard-gate in the Barge canal, to obtain the water-surface elevation above the dam. This correction has been taken from a curve drawn by plotting the elevations at the guard-gate as abscissas and the difference between the simultaneous readings at the guard-gate gage and the river gage as ordinates.

Daily elevation of water-surface (B. C. datum) of Hudson River above Crocker's Reef Dam, for the year ended June 30, 1918. John H. Donnelly, Observer

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	121.2	119.65	120.95	120.6	123.65	120.85	120.6	120.4	121.8	123.5	121.95	121.0
2.....	121.5	119.55	120.6	120.8	123.4	120.85	120.45	120.35	121.65	124.2	122.35	120.35
3.....	121.35	119.6	120.45	120.6	122.95	120.5	120.55	120.2	121.4	124.6	122.05	120.65
4.....	120.8	119.75	120.9	120.7	122.4	120.6	120.4	120.25	121.45	125.15	122.35	120.3
5.....	120.7	119.55	120.85	120.9	122.05	120.65	120.45	120.35	121.45	124.6	121.85	120.5
6.....	120.95	119.55	121.0	120.95	121.8	120.6	120.4	120.35	121.45	124.1	122.55	120.25
7.....	120.7	119.5	120.9	120.85	121.7	120.65	120.45	120.35	121.3	123.6	121.25	120.25
8.....	120.4	119.7	120.95	120.85	121.6	120.7	120.5	120.35	121.2	123.4	121.2	120.3
9.....	120.5	119.8	120.7	120.8	121.55	120.65	120.45	120.3	121.2	123.4	121.45	120.45
10.....	120.15	119.6	120.6	120.7	121.6	120.5	120.5	120.1	120.8	123.45	121.75	120.6
11.....	119.85	119.8	120.6	120.6	121.0	120.3	120.45	120.35	121.05	123.55	121.6	120.85
12.....	119.95	119.6	120.7	120.6	121.6	120.4	120.6	120.4	120.85	123.25	121.35	120.8
13.....	120.0	119.6	120.6	120.8	120.95	120.4	120.2	120.45	121.0	122.95	121.6	120.85
14.....	120.3	119.7	120.55	120.85	121.0	120.6	120.4	120.4	121.05	122.5	121.85	121.3
15.....	119.8	119.8	120.8	120.9	120.95	120.7	120.5	120.5	120.95	122.35	122.4	121.25
16.....	119.95	119.8	120.6	121.3	120.95	120.5	120.45	120.55	121.1	122.3	122.4	120.85
17.....	119.95	119.8	120.6	121.2	120.9	120.8	120.35	120.35	120.85	122.4	122.1	121.05
18.....	120.0	119.9	120.7	121.15	120.8	120.5	120.35	120.5	121.4	122.8	121.85	120.65
19.....	119.9	120.6	120.6	121.1	120.9	120.7	120.45	120.55	121.6	122.95	121.3	120.6
20.....	119.7	120.55	120.7	121.2	120.85	120.65	120.4	120.9	121.8	123.35	121.7	120.45
21.....	119.75	120.7	120.65	121.05	120.9	120.7	120.35	121.0	121.05	122.85	121.05	120.05
22.....	119.6	120.7	120.8	121.4	120.8	120.7	120.35	120.95	122.45	123.1	121.15	120.2
23.....	119.8	120.6	120.6	121.75	121.15	120.45	120.45	120.95	122.9	122.9	120.85	120.2
24.....	119.95	120.6	120.8	121.6	121.3	120.6	120.4	120.8	122.95	123.5	120.85	120.05
25.....	119.8	121.05	120.7	121.5	120.75	120.5	120.35	121.4	123.15	122.85	120.9	120.3
26.....	119.75	120.85	120.8	121.4	120.8	120.7	120.4	121.45	123.0	122.55	120.55	120.4
27.....	119.8	120.65	120.6	121.5	121.0	120.55	120.35	121.75	122.85	122.5	120.75	120.15
28.....	119.6	120.8	120.8	121.4	120.95	120.65	120.35	121.8	122.7	122.05	120.6	119.95
29.....	119.6	120.7	120.6	121.6	120.8	120.5	120.4	......	122.65	121.85	120.5	120.0
30.....	119.55	120.6	120.6	122.2	120.85	120.3	120.35	......	122.95	122.1	120.65	119.85
31.....	119.6	120.8	......	123.6	......	120.6	120.35	......	123.05	......	120.6	......

Daily discharge, in second-feet, of HUDSON RIVER AT CROCKER'S REEF DAM, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	7,540	1,220	2,270	1,150	14,500	1,910	......	......	......	20,000	14,600	6,600
2.....	9,070	938	1,150	1,780	13,100	1,910	......	......	......	23,300	13,700	3,640
3.....	8,340	1,070	764	1,150	11,000	895	......	......	......	25,300	12,100	4,900
4.....	5,610	1,520	2,090	1,450	8,430	1,150	......	......	......	28,000	13,700	3,430
5.....	5,120	938	1,910	2,030	6,840	1,300	......	......	......	25,300	11,000	4,240
6.....	6,320	938	2,460	2,210	5,710	1,150	......	......	......	22,800	14,900	3,230
7.....	5,120	830	2,090	1,910	5,270	1,300	......	......	......	20,400	7,860	3,230
8.....	3,810	1,370	2,270	1,910	4,840	1,450	......	......	......	19,400	7,540	3,430
9.....	4,240	1,670	1,450	1,780	4,600	1,300	......	......	......	19,400	8,820	4,040
10.....	2,870	1,070	1,150	1,450	4,840	895	......	......	......	19,700	10,400	4,670
11.....	1,840	1,670	1,150	1,150	2,460	416	......	......	......	20,200	9,630	5,830
12.....	2,140	1,070	1,450	1,150	4,840	640	......	......	......	18,600	8,040	5,610
13.....	2,290	1,070	1,150	1,780	2,210	640	......	......	......	17,000	9,630	5,830
14.....	3,430	1,370	1,030	1,910	2,460	1,150	......	......	......	14,600	11,000	8,100
15.....	1,670	1,670	1,780	2,090	2,210	1,450	......	......	......	13,700	14,000	7,860
16.....	2,140	1,670	1,150	3,620	2,210	......	......	......	......	13,500	14,600	5,830
17.....	2,140	1,670	1,150	3,240	2,030	......	......	......	......	14,000	12,400	6,820
18.....	2,290	*1,400	1,450	3,040	1,780	......	......	......	......	16,300	11,000	4,900
19.....	1,980	1,150	1,150	2,840	2,090	......	......	......	......	17,000	8,100	4,670
20.....	1,370	1,000	1,450	3,240	1,910	......	......	......	......	19,200	10,200	4,040
21.....	1,520	1,450	1,300	2,650	2,090	......	......	......	......	16,500	6,820	2,470
22.....	1,070	1,450	1,780	4,010	1,780	......	......	......	......	17,900	7,290	3,070
23.....	1,670	1,150	1,150	5,510	3,040	......	......	......	......	16,800	5,830	3,070
24.....	2,140	1,150	1,780	4,840	3,620	......	......	......	......	19,900	5,830	2,470
25.....	1,670	2,650	1,450	4,420	1,610	......	......	......	......	16,500	6,100	3,430
26.....	1,520	1,910	1,780	4,010	1,780	......	......	......	......	14,900	4,480	3,810
27.....	1,670	1,300	1,150	4,420	2,460	......	......	......	......	14,600	5,390	2,870
28.....	1,070	1,780	1,780	4,010	2,210	......	......	......	......	12,100	4,670	2,140
29.....	1,070	1,450	1,150	4,840	1,780	......	......	......	......	11,000	4,240	2,290
30.....	938	1,150	1,150	7,480	1,910	......	......	......	......	12,400	4,900	1,800
31.....	1,070	1,780	......	14,100	......	......	......	......	......	......	4,670	......
Mean..	3,056	1,372	1,498	3,264	4,189	......	......	......	......	18,010	9,124	4,277

* Twelve-inch flash-boards being placed; discharge approximate. Flash-boards in place on August 19 and remained in place till carried out by ice, exact date not known. Discharge over flash-boards computed for sharp-crested weir.

NOTE.— Discharge computed by applying correction to guard-gate elevation, correction above elevation 123.7 being obtained by extending correction curve.

Monthly discharge of HUDSON RIVER AT CROCKER'S REEF DAM, for the year ended June 30, 1918

[Drainage area, 2,959 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	9,070	938	3,056	1.03	1.19
August..........................	2,650	830	1,372	0.464	0.53
September..........................	2,460	764	1,498	0.506	0.56
October..........................	14,100	1,150	3,264	1.10	1.27
November..........................	14,500	1,610	4,189	1.42	1.58
December	....	....	....	....	....
January..........................	....	....	....	....	....
February..........................	....	....	....	....	....
March..........................	....	....	....	....	....
April..........................	28,000	11,000	18,010	6.09	6.80
May..........................	14,900	4,240	9,124	3.08	3.55
June..........................	8,100	1,800	4,277	1.44	1.61

HUDSON RIVER ABOVE DAM AT FORT MILLER

This station, established April 11, 1904, is located on the east bank of the Hudson river above the dam at Fort Miller. A board staff gage attached to a crib about 300 feet above the screen racks was transferred to the side wall of the head-race near the screen racks in 1913. In November, 1916, a standard Type A gage, No. 116, in two sections, was erected. The gage has a range of 12 feet, the lower section, attached to the side of the screen rack, reading from elevation 113.0 to elevation 121.0, and the upper section, attached to the side of the mill building, reading from elevation 121.0 to elevation 125.0. This dam has not been affected by Barge canal construction.

The gage is read twice daily — at 6 to 8 A. M. and 5 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER ABOVE DAM AT FORT MILLER, for the year ended June 30, 1918. W. L. Sanders, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	116.4	115.05	115.45	115.05	118.2	115.8	115.15	114.7	116.2	118.3	117.1	116.45
2.....	116.55	114.65	115.65	115.15	117.95	115.8	115.2	114.75	116.15	118.8	117.55	116.25
3.....	116.55	114.85	114.9	115.3	117.65	115.6	115.05	115.25	116.4	119.25	117.25	116.2
4.....	116.65	115.3	114.95	115.45	117.35	115.8	114.9	115.3	116.4	119.25	117.15	115.8
5.....	116.4	115.1	115.4	115.6	117.1	115.55	114.85	114.85	116.0	118.55	117.0	116.05
6.....	116.05	114.95	115.5	115.75	116.9	115.7	114.7	114.75	116.0	118.25	116.85	115.75
7.....	116.0	114.65	115.3	115.75	116.7	115.75	114.5	114.65	115.8	117.75	116.8	115.65
8.....	115.95	114.9	115.45	115.7	116.55	115.6	114.7	114.8	115.9	117.75	116.7	115.85
9.....	116.0	114.95	115.9	115.55	116.45	115.7	114.7	114.75	115.6	117.6	116.9	116.25
10.....	115.65	114.6	115.0	115.55	116.3	115.25	114.9	114.8	116.0	117.75	117.0	116.2
11.....	115.35	115.3	114.5	115.45	116.0	115.2	114.55	114.95	115.15	117.95	116.9	116.65
12.....	115.35	115.0	114.65	115.6	116.3	115.0	114.55	115.05	115.85	117.8	117.0	116.15
13.....	115.65	115.35	115.4	115.6	116.15	114.8	115.1	115.0	115.8	117.7	117.0	116.25
14.....	115.35	115.2	115.05	115.85	116.05	114.85	115.0	114.9	115.85	117.6	117.25	116.5
15.....	115.55	115.15	114.95	115.75	116.05	114.85	114.95	114.85	115.8	117.55	117.55	116.4
16.....	115.4	115.2	115.3	116.1	115.95	115.2	114.75	115.1	115.8	117.55	117.55	116.55
17.....	115.6	115.25	115.2	115.95	115.85	114.95	115.05	115.45	115.85	117.45	117.4	116.3
18.....	115.45	115.15	115.0	116.05	115.9	114.95	115.7	115.6	115.85	117.5	117.15	116.0
19.....	115.2	115.25	114.9	115.95	115.9	114.95	115.6	115.55	115.9	117.85	116.8	115.8
20.....	115.2	115.15	114.7	116.0	115.95	114.85	115.2	115.9	116.6	117.55	117.15	115.75
21.....	115.4	115.15	115.05	115.9	115.9	115.1	115.15	115.95	116.7	117.6	116.35	115.65
22.....	115.85	115.0	115.0	116.0	115.85	115.05	115.35	115.85	117.1	118.0	116.3	115.75
23.....	115.4	114.9	115.55	116.2	116.1	115.6	114.95	115.8	117.5	118.0	116.15	115.85
24.....	115.4	115.05	115.4	115.95	116.2	115.0	114.7	115.85	117.8	118.35	116.2	115.5
25.....	115.3	115.5	115.15	115.9	116.1	115.15	114.85	116.1	117.7	117.95	116.0	115.8
26.....	115.05	115.6	115.15	116.05	116.05	115.3	114.8	116.15	117.75	117.7	116.25	115.6
27.....	114.8	115.25	115.2	116.35	115.95	115.1	115.15	116.1	117.6	117.4	116.15	115.65
28.....	115.0	115.65	115.1	116.3	115.5	115.0	115.7	116.25	117.8	117.15	116.1	115.35
29.....	115.95	115.05	114.95	116.5	115.55	115.05	115.15	......	117.5	116.85	116.05	115.3
30.....	115.35	115.4	115.5	116.95	115.5	115.4	114.95	......	117.8	116.85	116.1	115.45
31.....	115.2	115.35	......	118.1	......	115.4	114.8	......	118.0	......	116.0	......

HUDSON RIVER BELOW DAM AT FORT MILLER

This station, established May 1, 1904, was originally located on the wall near the tail-race of the paper company, on the east bank of the river. From April, 1911, to November, 1916, it was located below Barge canal lock No. 6, on the third crib from the lower approach wall. On November 21, 1916, a standard Type A gage, No. 115, in two sections, was erected. The gage has a range of 15 feet, the lower section, attached to the return of the east lower approach wall of lock No. 6, reading between elevations 102.0 and 110.0, and the upper section, attached to the east abutment of the highway bridge over the lower end of lock No. 6, reading between elevations 110.0 and 117.0. A standard bench-mark plug is set near the lower section at elevation 109.0 (B. C. datum) and an "H" cut in concrete beside the upper section at elevation 114.0 (B. C. datum).

The gage is read twice daily — at 6 to 8 A. M. and 5 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of Hudson River below Dam at Fort Miller, for the year ended June 30, 1918. W. L. Sanders, Observer

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	105.3	102.95	103.8	102.9	107.05	103.05	102.6	102.0	105.1	107.15	105.2	104.05
2	105.4	102.8	103.65	102.3	106.75	104.2	102.55	102.05	104.85	107.8	105.6	103.5
3	105.2	103.0	103.6	102.55	106.45	102.9	102.5	101.8	105.05	108.65	105.2	103.65
4	105.2	103.45	103.45	103.05	106.0	103.8	102.6	102.3	104.7	108.8	105.4	103.0
5	104.85	103.8	103.5	102.7	105.6	102.85	102.2	102.15	104.4	108.15	104.95	103.2
6	104.5	103.2	103.2	103.35	105.2	103.3	101.8	102.05	104.4	107.65	104.7	103.3
7	104.25	103.3	103.3	104.1	104.9	103.45	102.35	102.0	104.45	107.15	104.4	103.45
8	104.15	103.15	103.9	103.95	104.75	103.6	102.6	102.05	104.0	106.7	104.35	104.05
9	104.2	103.5	104.0	102.5	104.6	103.9	102.05	102.05	104.4	106.75	104.65	104.35
10	103.7	103.25	103.8	102.35	104.35	102.4	102.45	101.85	104.25	107.1	104.65	104.4
11	103.5	103.25	102.4	102.25	104.4	102.2	102.1	101.95	104.45	106.7	104.5	105.45
12	103.55	104.5	102.55	102.25	104.25	101.6	102.1	102.15	104.15	106.55	104.75	105.15
13	103.65	103.6	102.5	102.55	104.15	102.45	102.2	102.15	103.8	106.05	104.95	104.75
14	103.25	103.4	102.6	103.75	104.1	102.65	102.5	102.15	103.55	105.9	105.3	105.0
15	104.0	102.7	102.4	103.4	104.05	102.65	102.15	102.05	104.45	105.55	105.65	104.7
16	103.85	103.4	103.25	104.2	103.95	102.5	101.9	102.15	104.05	105.6	105.6	104.8
17	103.85	102.65	102.95	103.9	103.8	103.35	102.5	102.6	104.2	105.7	105.15	104.6
18	103.45	102.95	102.65	104.1	104.3	102.95	102.55	102.9	104.4	105.8	104.85	104.1
19	103.45	103.75	102.7	103.9	104.25	102.85	102.95	103.1	104.6	106.05	104.4	104.05
20	102.9	103.3	102.65	104.0	104.05	102.95	102.8	104.6	105.1	106.7	104.75	104.0
21	103.2	103.05	102.55	104.55	104.0	102.9	102.8	104.1	105.4	106.05	104.0	104.15
22	104.3	102.45	102.6	103.6	103.95	103.3	102.6	104.25	105.8	106.45	103.9	104.3
23	103.4	102.55	103.55	104.4	104.05	103.6	102.6	104.1	106.3	106.35	103.55	104.45
24	103.75	102.7	103.5	104.05	104.4	103.1	102.6	104.85	106.7	106.95	103.55	103.8
25	103.2	103.35	102.85	104.1	104.35	102.95	102.35	105.15	106.9	106.15	103.4	104.35
26	102.7	104.0	103.3	104.3	104.3	103.05	102.2	105.0	107.05	105.35	103.6	104.15
27	102.7	103.2	102.85	104.5	103.85	102.85	102.4	105.2	106.75	105.3	103.55	104.1
28	102.9	103.55	102.15	104.75	103.0	102.85	103.45	105.25	106.4	105.2	103.65	103.75
29	103.5	102.95	102.4	104.65	102.65	102.8	102.9	......	106.0	105.0	103.55	103.6
30	103.05	102.4	103.15	105.25	102.35	102.8	102.1	......	106.15	105.0	103.7	103.6
31	103.1	103.5	......	106.9	......	102.9	102.05	......	106.5	......	103.55	......

HUDSON RIVER ABOVE LOCK No. 5, NORTHUMBERLAND

This station, established October 24, 1916, is located at the upper end of lock No. 5. Above lock No. 5 the canal follows a land-line for about one mile, entering the river above the dam at Northumberland. The water-surface indicated by this gage is practically that at the junction of the canal and river above the dam. The gage, No. 114, is a standard Type A gage, secured to the upper end of the east upper gate recess, and has a range of 11 feet, between elevations 100.0 and 111.0. A standard bench-mark plug is set in the wall near the gage at elevation 110.0 (B. C. datum).

The gage is read twice daily — at 8 A. M. and 4 P. M.— to half-tenths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER ABOVE LOCK 5, NORTHUMBERLAND, for the year ended June 30, 1918. G. W. Perkins, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	105.30	102.78	103.70	102.60	106.52	103.12	102.52	102.05	104.95	106.05	104.70	103.92
2.....	105.15	102.78	104.10	102.42	106.38	104.32	102.38	101.98	104.62	106.62	105.02	103.45
3.....	104.95	103.02	103.78	102.40	105.95	101.90	102.32	101.55	104.85	107.18	105.15	103.58
4.....	104.98	103.58	103.05	103.22	105.80	103.82	102.40	102.05	104.62	107.42	105.05	103.10
5.....	104.50	104.15	103.45	102.85	105.32	102.85	102.02	102.42	104.15	106.92	104.75	103.20
6.....	104.30	103.00	103.40	103.28	105.10	103.35	101.72	101.92	104.30	106.45	104.30	103.20
7.....	104.20	103.50	103.22	104.30	104.80	103.15	102.58	101.90	104.22	106.20	104.02	102.95
8.....	104.20	103.80	103.25	103.82	104.60	103.42	102.25	102.00	104.15	105.85	103.95	103.95
9.....	104.15	103.50	104.10	102.60	104.48	104.10	102.02	102.08	103.98	105.95	104.18	104.38
10.....	103.80	103.22	103.08	102.55	104.30	102.38	102.32	101.85	104.08	106.10	104.48	104.42
11.....	102.72	103.20	102.45	102.28	104.45	102.28	102.12	101.65	104.10	105.98	104.32	105.00
12.....	102.50	104.38	102.55	102.40	104.28	102.32	102.02	102.22	103.95	105.75	104.40	104.42
13.....	103.58	103.35	102.50	102.65	104.25	102.30	103.12	102.08	103.52	105.40	104.55	104.38
14.....	103.30	103.45	102.62	103.62	104.08	102.78	102.58	101.78	103.88	105.38	104.60	104.62
15.....	104.18	102.80	102.48	103.38	103.92	103.30	102.38	101.90	103.98	105.08	105.10	104.55
16.....	104.00	103.32	103.55	104.08	103.88	103.82	102.12	102.32	104.20	104.92	105.10	104.65
17.....	103.92	102.70	102.75	103.90	103.82	103.72	101.80	103.50	104.88	105.12	104.88	104.55
18.....	103.45	103.00	102.50	104.02	104.45	103.52	102.22	103.22	104.32	105.28	104.58	103.98
19.....	102.82	104.25	102.40	103.78	104.00	103.10	102.78	102.22	104.38	105.55	104.25	103.72
20.....	102.88	102.72	102.62	103.75	103.98	102.72	102.90	104.38	104.72	105.80	104.42	103.75
21.....	103.45	103.20	102.45	104.25	104.08	102.82	102.90	103.90	104.95	105.55	103.85	104.05
22.....	104.32	102.60	102.68	103.72	104.05	103.28	102.28	103.58	105.10	105.65	103.82	104.35
23.....	103.40	102.48	104.08	104.38	104.15	103.75	102.18	104.25	105.32	105.48	103.38	104.22
24.....	103.78	102.60	103.22	104.18	104.30	103.25	102.35	104.80	105.52	106.00	103.55	104.52
25.....	105.05	103.35	103.32	104.10	104.42	102.05	101.90	104.90	105.55	105.58	103.15	104.25
26.....	102.60	104.25	103.58	104.28	104.25	103.55	102.02	104.82	105.65	105.30	103.60	104.05
27.....	102.58	103.08	103.05	104.35	103.68	102.35	103.18	104.85	105.55	105.02	103.48	104.05
28.....	102.75	103.68	102.80	104.70	102.50	102.85	102.90	105.05	105.35	104.98	103.35	103.75
29.....	104.40	102.42	102.35	104.60	102.78	102.55	102.20	......	105.12	104.68	103.32	103.58
30.....	103.28	102.55	103.90	105.05	102.40	102.92	101.92	......	105.55	104.68	103.52	103.88
31.....	103.32	103.38	......	106.28	......	102.38	102.00	......	105.65	......	103.38	......

HUDSON RIVER AT FREE BRIDGE, LIBERTY MILLS

This station, established October 23, 1905, is located on the highway bridge across the Hudson river commonly known as Free bridge, about ¾ mile south, or downstream from the dam at Northumberland, about ¼ mile above the mouth of Batten kill and about 1¼ miles above the village of Schuylerville. The gage is a standard chain gage located on the downstream side of the bridge and is read twice daily — at 6:30 A. M. and 5:30 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of Hudson River at Free Bridge, Liberty Mills, for the year ended June 30, 1918. Wm. B. Dunstan, Observer

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	87.5	84.1	85.6	84.8	90.5	85.5	85.1	85.3	88.9	90.9	88.75	86.3
2.....	87.8	84.1	85.1	85.0	89.45	85.8	85.1	85.3	88.5	92.5	88.6	86.7
3.....	87.6	84.4	85.0	85.2	88.9	85.6	85.1	85.1	87.8	93.8	88.6	86.65
4.....	87.0	85.25	85.25	85.2	88.4	85.4	85.1	85.1	88.15	94.3	88.6	85.5
5.....	86.9	85.2	85.65	85.3	88.15	85.2	85.1	85.2	88.0	93.5	88.25	85.3
6.....	86.45	85.0	85.7	85.45	87.9	85.1	85.05	85.3	88.0	92.4	88.15	85.2
7.....	86.3	84.8	85.65	85.5	87.3	85.0	85.1	85.35	87.9	91.5	87.65	85.15
8.....	85.2	85.0	85.5	85.6	86.95	85.0	85.15	85.15	87.25	91.05	87.5	85.1
9.....	85.5	85.05	85.3	85.6	86.7	85.1	85.1	85.1	86.95	91.6	87.65	85.75
10.....	85.65	85.0	85.3	85.2	86.3	84.9	85.1	84.9	86.8	91.45	88.2	86.0
11.....	85.1	85.1	84.9	85.1	85.4	84.7	85.1	84.9	87.6	90.8	88.3	86.75
12.....	84.8	85.4	84.75	85.1	85.35	84.7	85.1	85.15	86.7	90.05	87.8	86.9
13.....	85.15	85.5	84.9	85.1	85.45	84.75	85.0	85.15	86.45	89.85	87.75	86.8
14.....	85.2	85.5	85.25	85.1	85.6	84.9	85.2	85.5	86.55	89.6	88.15	87.2
15.....	85.1	85.5	85.0	85.35	85.6	85.0	85.2	85.5	86.6	89.55	88.8	87.05
16.....	85.4	85.7	84.7	86.0	85.6	85.0	85.2	85.2	86.7	89.35	88.9	86.7
17.....	85.4	85.55	84.7	85.95	85.6	85.45	85.2	85.2	86.0	89.4	88.45	86.1
18.....	85.2	85.5	85.2	86.0	85.7	85.15	85.1	85.8	87.15	89.8	88.1	85.4
19.....	85.0	85.5	85.2	86.0	86.0	85.2	85.1	85.6	88.05	90.5	87.9	85.1
20.....	85.0	85.15	85.15	85.8	86.0	85.35	85.1	90.95	88.9	90.5	87.8	85.2
21.....	85.0	85.05	85.0	85.8	85.4	85.3	85.2	88.8	89.45	89.9	86.85	85.4
22.....	85.0	85.1	85.0	86.25	85.4	85.5	85.2	88.4	90.0	90.3	86.8	85.5
23.....	85.0	85.0	85.15	86.25	85.6	85.2	85.2	88.1	90.65	90.5	86.6	84.9
24.....	85.3	85.0	85.35	86.1	85.8	85.2	85.15	88.1	90.5	91.1	86.6	85.0
25.....	85.1	85.5	85.4	85.9	85.6	85.7	85.1	88.2	90.65	90.5	86.1	85.25
26.....	84.8	85.5	85.4	86.0	86.0	85.7	85.1	89.5	90.6	89.95	85.9	85.5
27.....	84.8	85.15	85.5	86.1	85.7	85.2	85.1	89.75	90.2	89.8	86.1	85.4
28.....	84.55	85.5	85.45	86.1	85.6	85.2	85.2	89.3	89.95	89.5	86.1	85.15
29.....	85.4	85.5	84.9	86.45	85.4	85.2	85.2	......	89.8	88.85	86.0	84.95
30.....	84.9	85.15	84.7	87.6	85.5	85.2	85.25	......	89.95	88.8	85.95	84.5
31.....	84.55	85.2	......	89.75	......	85.2	85.3	......	90.3	......	85.95	......

HUDSON RIVER BELOW LOCK No. 5, NORTHUMBERLAND

The concrete gage in the lock wall was read until November 19, when a standard Type A gage, No. 113, in two sections, was erected. The lower section is secured to the lower end of the east guide-wall and has a range of 12 feet, between elevations 82.0 and 94.0. The upper section is secured to the south end of the east lower thrust wall and has a range of 12 feet, between elevations 94.0 and 106.0. Standard bench-mark plugs are set in the wall near the gages, for the lower section at elevation 93.0 (B. C. datum) and for the upper section at elevation 97.0 (B. C. datum).

The gage is read twice daily — at 8 A. M. and 4 P. M. — to half-tenths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER BELOW LOCK No. 5, AT NORTHUMBERLAND, for the year ended June 30, 1918. G. W. Perkins, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	86.52	83.95	85.30	84.25	90.00	84.82	84.45	84.25	87.45	90.68	88.08	85.88
2.....	87.10	83.90	85.05	84.60	89.40	85.30	84.45	84.25	87.00	91.98	88.70	85.02
3.....	86.55	84.08	84.78	84.82	88.60	84.75	84.28	84.00	86.55	93.48	88.00	85.38
4.....	86.12	85.05	84.85	85.10	87.62	85.28	84.55	83.95	87.00	93.95	88.52	84.85
5.....	85.98	84.65	85.25	84.88	87.35	85.00	84.35	84.55	87.45	93.10	87.45	84.92
6.....	85.40	84.60	85.22	85.02	86.78	84.85	84.12	84.45	86.55	92.05	87.15	84.72
7.....	85.22	84.40	85.10	85.00	86.40	84.90	84.02	84.30	86.52	90.88	86.62	84.62
8.....	84.68	84.65	85.15	85.15	86.18	84.80	84.40	84.28	86.25	90.60	85.90	84.98
9.....	85.20	84.78	85.02	84.92	85.88	84.85	84.30	84.32	85.88	90.58	86.42	84.90
10.....	85.02	84.70	84.75	84.85	85.68	84.50	84.40	83.90	85.72	91.08	87.38	85.12
11.....	84.30	84.68	84.65	84.65	85.30	84.50	84.38	83.48	85.90	90.90	86.98	86.40
12.....	84.32	85.02	84.52	84.75	85.20	84.35	84.38	84.12	85.90	90.28	86.78	85.75
13.....	84.82	84.75	84.40	84.90	85.55	84.38	84.15	84.20	85.62	89.62	87.08	85.90
14.....	84.58	85.15	84.52	85.05	85.38	84.62	84.22	84.20	86.10	89.05	87.37	86.35
15.....	84.62	84.85	84.68	85.15	85.25	84.78	84.42	84.78	86.40	88.80	88.30	86.02
16.....	84.72	85.20	84.38	85.62	85.05	84.65	84.32	85.25	86.38	88.50	88.45	85.75
17.....	84.80	85.00	84.40	85.38	85.08	84.86	84.25	84.72	85.60	88.85	87.82	85.78
18.....	84.55	85.12	84.92	85.52	85.10	84.68	84.28	85.08	86.92	89.15	87.32	85.60
19.....	84.38	85.02	84.75	85.52	85.02	84.75	84.38	84.58	87.28	89.80	86.42	84.88
20.....	84.65	84.52	84.75	85.48	85.25	84.78	84.10	89.12	88.30	90.48	87.05	84.75
21.....	84.60	84.92	84.75	85.25	85.00	84.70	84.32	87.02	88.88	89.55	86.12	84.72
22.....	84.45	84.82	84.62	85.18	85.00	84.92	84.38	86.12	89.68	90.30	86.05	84.75
23.....	84.40	84.65	84.72	85.80	85.38	84.78	84.28	86.10	90.45	89.95	85.52	84.67
24.....	84.65	84.68	84.82	85.35	85.62	84.68	84.35	85.80	90.35	91.05	85.55	84.42
25.....	84.32	85.00	84.90	85.60	85.20	84.30	84.30	86.68	90.38	89.78	85.08	84.90
26.....	84.18	85.05	84.80	85.68	85.38	84.88	84.28	88.52	90.08	88.90	85.00	84.62
27.....	84.40	84.88	84.95	85.90	85.25	84.42	84.08	87.75	89.65	88.70	85.30	84.55
28.....	83.90	85.20	84.80	85.78	84.80	84.62	84.05	87.82	89.28	87.95	85.32	84.50
29.....	84.48	84.82	84.72	86.18	84.90	84.40	84.32	......	89.10	87.75	85.10	84.45
30.....	84.20	84.75	84.48	86.88	84.08	84.32	84.35	......	89.55	87.88	85.28	84.08
31.....	84.08	84.72	......	89.68	......	84.32	84.28	......	89.78	......	85.25	......

HUDSON RIVER AT TOLL BRIDGE, SCHUYLERVILLE

This station, established August 14, 1905, is located on the bridge across the Hudson river at Ferry street, Schuylerville, commonly known as Toll bridge. The gage is a standard chain gage located on the new truss across the Barge canal channel. The gage is read twice daily to tenths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER AT TOLL BRIDGE SCHUYLERVILLE, for the year ended June 30, 1918. Charlie Cheney, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	86.35	84.15	85.55	84.25	89.6	84.9	84.6	84.6	87.35	90.5	88.05	85.8
2.....	86.7	84.08	85.1	84.4	89.1	85.4	84.5	84.65	86.90	91.75	88.05	85.25
3.....	86.3	84.1	84.95	84.85	88.35	84.85	84.45	84.25	86.60	93.0	88.05	85.4
4.....	85.8	85.15	84.9	85.2	87.45	85.35	84.55	84.2	86.65	93.65	88.10	85.05
5.....	85.6	84.8	85.4	85.05	87.1	85.1	84.45	84.2	86.55	92.7	87.5	85.05
6.....	85.4	84.65	85.3	85.2	86.7	85.0	84.3	84.25	86.40	91.7	87.1	85.05
7.....	85.15	84.6	85.3	85.05	86.4	84.95	84.3	84.3	86.15	90.5	86.7	85.0
8.....	84.9	84.7	85.1	85.25	86.15	84.9	84.55	84.25	86.05	90.35	86.4	85.15
9.....	84.95	84.9	85.15	85.05	85.9	84.95	84.5	84.3	85.85	90.45	86.85	85.1
10.....	84.95	84.8	85.05	84.9	85.8	84.7	84.55	84.05	85.8	90.75	87.1	85.35
11.....	84.35	84.75	84.8	84.85	85.4	84.7	84.5	82.85	85.7	90.65	86.7	86.3
12.....	84.3	85.05	84.6	84.85	85.2	84.5	84.55	84.55	85.8	90.1	86.75	85.95
13.....	84.8	84.75	84.3	85.1	85.9	84.5	84.35	84.6	85.7	89.35	86.85	86.1
14.....	84.45	85.15	84.55	85.15	85.5	84.4	84.45	84.5	85.9	88.9	87.4	86.35
15.....	84.45	85.15	84.85	85.2	85.4	84.4	84.45	85.25	86.35	88.65	88.15	86.15
16.....	84.45	85.35	84.55	85.65	85.05	84.6	84.4	85.15	86.45	88.45	88.25	86.0
17.....	84.7	85.2	84.6	85.6	85.25	84.85	84.25	84.95	85.7	88.75	87.65	85.8
18.....	84.45	85.25	85.05	85.6	85.25	84.65	84.3	85.15	86.4	89.05	87.0	85.4
19.....	84 35	85.1	85.0	85.6	85.25	84.75	84.25	84.95	87.15	89.6	86.5	85.15
20.....	84.65	84.95	84.9	85.55	85.35	84.8	84.4	88.75	87.85	90.2	87.05	84.95
21.....	84.55	85.15	84.9	85.35	85.15	84.75	84.45	86.85	88.55	89.7	86.15	84.95
22.....	84.25	85.0	84.9	85.3	85.15	85.0	84.5	86.05	89.20	89.85	85.95	85.1
23.....	84.3	84.85	84.8	85.9	85.6	84.9	84.4	86.20	90.00	89.7	85.9	84.95
24.....	84.55	84.85	85.0	85.5	85.7	84.9	84.55	85.90	89.95	90.75	85.9	84.65
25.....	84.35	85.15	85.15	85.55	85.3	84.5	84.5	86.35	90.20	89.4	85.35	85.1
26.....	84.25	85.2	85.05	85.65	85.35	85.05	84.45	87.95	89.60	88.7	85.3	84.85
27.....	83.9	85.05	85.1	86.0	85.15	85.05	84.3	87.50	89.35	88.75	85.6	84.9
28.....	84.95	85.35	84.95	85.95	84.75	84.7	84.4	87.45	88.95	88.7	85.55	84.75
29.....	84.5	85.05	84.85	86.05	84.95	84.55	84.5	......	88.95	87.55	85.45	84.6
30.....	84.2	84.85	84.55	86.9	84.75	84.5	84.55	......	89.50	87.85	85.5	84.45
31.....	84.15	84.95	......	89.3	......	84.45	84.6	......	89.65	......	85.45	......

HUDSON RIVER BELOW DAM AT STILLWATER

This station, established July 15, 1909, is located on the west bank of the Hudson river below the dam at Stillwater. The staff gage at the tail-race of the A. T. Pack grist-mill was replaced on August 17, 1916, by a standard Type A gage in the same location and having a range of 11½ feet, between elevations 74.0 and 85.5 (B. C. datum).

The gage is read twice daily — morning and afternoon — to tenths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER BELOW DAM AT STILLWATER, for the year ended June 30, 1918. John T. Morris, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	77.55	76.0	76.3	76.0	79.1	76.1	76.0	76.85	78.85	79.3	78.3	76.85
2.....	77.65	76.0	76.3	76.0	79.0	76.4	76.2	76.9	78.75	79.75	78.4	76.45
3.....	77.7	76.15	76.25	76.0	78.8	76.1	76.3	76.9	78.15	80.15	78.25	76.5
4.....	77.3	76.15	76.2	76.05	78.95	76.25	76.3	76.9	78.1	80.45	78.2	76.25
5.....	77.2	76.0	76.2	76.05	77.75	76.15	76.35	76.9	78.1	80.35	77.9	76.2
6.....	76.95	76.0	76.2	76.0	77.35	76.15	76.3	76.9	78.3	79.75	77.85	76.25
7.....	76.85	76.0	76.1	76.0	77.3	76.05	76.35	76.9	78.4	79.4	77.6	76.1
8.....	76.4	76.05	76.15	76.05	76.95	76.0	76.6	76.9	78.2	79.2	77.3	76.4
9.....	76.5	76.05	76.15	76.1	76.75	76.1	76.35	76.9	78.0	79.25	77.45	76.35
10.....	76.55	76.05	76.15	76.0	76.65	76.1	76.35	76.8	77.7	79.4	77.6	76.5
11.....	76.0	76.05	76.25	76.0	76.45	76.15	76.35	76.75	77.65	79.4	77.8	77.35
12.....	76.0	76.15	76.0	76.0	76.25	76.0	76.6	76.7	77.7	79.15	77.6	77.0
13.....	76.35	76.1	76.0	76.0	76.6	76.05	76.8	76.9	77.6	78.95	77.6	77.05
14.....	76.4	76.2	76.0	76.05	76.45	76.05	76.85	76.9	77.8	78.7	77.9	77.3
15.....	76.1	76.25	76.0	76.05	76.45	76.35	76.9	77.45	77.85	78.55	78.45	77.1
16.....	76.2	76.35	76.0	76.35	76.15	76.2	76.8	77.9	77.7	78.4	78.5	76.95
17.....	76.3	76.2	76.0	76.2	76.15	76.15	76.8	77.0	77.4	78.55	78.05	76.9
18.....	76.25	76.25	76.2	76.35	76.15	76.15	76.8	77.25	78.5	78.65	77.9	76.5
19.....	76.05	76.2	76.4	76.35	76.1	76.4	76.5	77.65	78.7	78.9	77.6	76.3
20.....	76.35	76.05	76.35	76.25	76.2	76.25	76.5	79.75	78.8	79.2	77.6	76.15
21.....	76.2	76.15	76.3	76.3	76.1	76.2	76.6	79.5	78.1	78.75	77.25	76.0
22.....	76.05	76.1	76.25	76.3	76.2	76.3	76.6	78.3	78.25	79.0	77.05	76.05
23.....	76.05	76.05	76.3	76.75	76.45	76.2	76.6	78.3	78.6	79.0	76.9	76.15
24.....	76.2	76.1	76.0	76.25	76.7	76.15	76.5	78.0	78.95	79.45	76.85	75.9
25.....	76.05	76.25	76.0	76.3	76.35	76.1	76.5	79.3	79.05	79.0	76.65	76.2
26.....	76.05	76.2	76.0	76.45	76.35	76.15	76.5	79.3	79.25	78.6	76.5	76.05
27.....	75.9	76.15	76.0	76.6	76.3	76.15	76.4	79.7	79.0	78.4	76.6	76.1
28.....	76.0	76.25	76.0	76.65	76.1	76.2	76.4	78.9	78.75	78.0	76.6	76.0
29.....	76.15	76.2	76.0	76.7	76.1	76.4	76.6	......	78.6	77.9	76.8	75.6
30.....	76.0	76.15	76.0	76.75	76.05	76.05	76.8	......	78.85	78.1	76.7	75.6
31.....	76.0	76.15	......	78.95	......	76.1	76.8	......	79.0	......	76.7	......

This station, established April 1, 1916, is located at the upper end of Barge canal lock No. 4 at Stillwater. Above the lock a land-line about 2,400 feet long joins the Hudson river about 1,400 feet above the dam. The water-surface indicated approximates that at this junction. The upper concrete staff gage in the lock was used until October 31. Since November 1 a standard Type A gage, No. 109, has been used. This gage is secured to the west upper gate recess and has a range of 12 feet, between elevations 81.0 and 93.0. A standard bench-mark plug is set in the wall near the gage at elevation 92.0 (B. C. datum).

The gage is read twice daily — at 8 A. M. and 3 to 4 P. M. — to half-tenths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER ABOVE LOCK No. 4, AT STILLWATER, for the year ended June 30, 1918. John O. Fordham, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	85.50	83.82	85.02	84.08	87.38	84.60	84.28	84.10	85.60	87.35	86.15	85.05
2.....	85.80	83.80	84.98	84.55	87.12	85.08	84.22	84.10	85.35	87.90	86.32	84.60
3.....	85.45	83.90	84.78	84.68	86.72	84.70	84.35	83.85	85.22	88.60	86.18	84.70
4.....	85.25	84.80	84.70	84.90	86.30	85.00	84.32	83.70	85.30	88.88	86.35	84.55
5.....	85.10	84.58	85.12	84.85	86.10	84.82	84.15	84.35	85.18	88.50	85.78	84.52
6.....	84.92	84.48	85.05	84.88	85.85	84.70	84.00	84.30	85.30	87.98	85.05	84.62
7.....	84.78	84.58	85.00	84.92	85.68	84.72	83.90	84.05	85.18	87.45	85.45	84.38
8.....	84.45	84.68	85.00	84.88	85.48	84.60	84.20	84.00	85.05	87.38	85.28	84.52
9.....	84.55	84.08	84.90	84.88	85.38	84.70	84.12	84.05	84.95	87.35	85.55	84.65
10.....	84.68	84.60	84.68	84.80	85.35	84.30	84.12	83.78	84.68	87.60	85.55	84.78
11.....	84.18	84.48	84.68	84.65	85.05	84.25	84.10	83.50	84.65	87.42	85.55	85.45
12.....	84.12	84.90	84.55	84.68	84.85	84.12	84.15	83.75	84.85	87.20	85.50	85.00
13.....	84.58	84.62	84.32	84.80	85.28	84.35	84.05	84.05	84.75	86.88	85.55	85.15
14.....	84.30	85.00	84.52	85.00	85.05	84.38	84.00	84.05	84.95	86.62	85.78	85.40
15.....	84.35	84.90	84.65	84.90	84.98	84.42	84.25	84.40	85.10	86.48	86.35	85.30
16.....	84.28	84.98	84.35	85.32	84.92	84.32	84.12	84.72	85.10	86.35	86.35	85.10
17.....	84.49	84.88	84.35	85.22	84.82	84.38	84.05	84.45	84.80	86.48	86.15	85.00
18.....	84.38	85.00	84.72	85.28	84.95	84.38	84.05	84.50	85.25	86.62	85.88	84.85
19.....	84.05	84.92	84.75	85.15	84.70	84.40	84.10	84.35	85.48	86.90	85.42	84.68
20.....	84.48	84.60	84.72	85.25	85.00	84.42	84.05	86.52	85.70	87.25	85.72	84.50
21.....	84.25	84.95	84.68	85.18	84.88	84.42	84.05	85.60	86.00	86.72	85.30	84.30
22.....	84.32	84.72	84.65	84.90	84.88	84.60	84.10	85.05	86.32	87.12	85.18	84.50
23.....	84.15	84.60	84.72	85.52	85.08	84.45	84.00	84.98	86.62	87.05	84.90	84.55
24.....	84.38	84.58	84.65	85.25	85.25	84.52	84.10	84.85	86.80	87.50	84.90	84.20
25.....	84.10	84.85	84.82	85.35	85.10	84.18	84.10	85.15	86.95	86.95	84.72	84.52
26.....	83.98	84.98	84.70	85.35	85.10	84.42	84.10	86.12	87.10	86.50	84.58	84.45
27.....	83.70	84.72	84.80	85.55	85.02	84.25	83.95	85.75	86.90	86.48	84.70	84.32
28.....	83.90	85.02	84.68	85.58	84.60	84.30	84.00	85.72	86.70	86.05	84.75	84.22
29.....	84.28	84.85	84.68	85.58	84.60	84.30	84.12	......	86.62	85.90	84.80	84.12
30.....	83.90	84.70	84.48	85.85	84.50	84.15	84.22	......	86.58	86.02	84.78	84.15
31.....	83.88	84.68	......	87.25	......	84.05	84.10	......	86.98	......	84.70	......

HUDSON RIVER BELOW LOCK No. 4, STILLWATER

This station, established October 19, 1916, is located at the lower end of lock No. 4. The water-surface indicated is that of the upper end of the pool maintained by the dam of the West Virginia Pulp and Paper Company. The gage, No. 108, is a standard Type A gage in two sections. The lower section is secured to the nosing at the lower end of the west lock wall and has a range of 11½ feet, between elevations 65.0 and 76.5. The upper section is secured to the end of the west lower thrust wall of the lock and has a range of 8 feet, between elevations 76.5 and 84.5. Standard bench-mark plugs are set in the walls near the gages, for the lower section at elevation 76.0 (B. C. datum) and for the upper section at elevation 79.0 (B. C. datum).

The gage is read twice daily — at 8 A. M. and 3 to 4 P. M. — to half-tenths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER BELOW LOCK No. 4 AT STILLWATER, for the year ended June 30, 1918. John O. Fordham, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	69.85	67.82	70.12	69.85	73.65	69.88	69.30	68.90	74.15	71.88	70.45	68.80
2.....	70.18	67.42	70.62	70.32	73.30	71.62	68.95	68.70	73.80	72.60	70.90	68.65
3.....	69.95	67.68	70.62	70.18	72.92	69.70	68.75	68.80	72.95	73.30	70.45	68.40
4.....	69.75	68.00	70.28	70.12	72.88	69.75	69.25	68.55	73.40	73.25	70.65	68.20
5.....	69.10	67.92	70.68	70.15	72.15	70.15	68.42	69.25	72.30	72.90	70.55	68.02
6.....	68.75	68.08	70.30	70.38	71.80	70.10	67.95	69.58	72.20	72.35	69.95	67.95
7.....	68.38	69.55	70.28	70.72	71.45	70.05	67.88	69.28	73.95	71.95	70.00	67.50
8.....	69.00	67.80	70.25	70.18	71.25	69.70	68.75	68.80	72.55	71.60	69.40	69.45
9.....	68.18	70.18	70.55	69.80	71.18	70.88	68.35	68.40	71.70	71.65	69.48	70.10
10.....	68.02	69.98	69.00	69.92	71.05	66.65	68.45	68.58	70.85	72.08	69.65	70.80
11.....	67.15	70.05	70.02	69.35	71.45	66.72	68.38	68.55	72.35	71.90	69.80	71.65
12.....	67.60	70.58	69.18	69.60	68.10	67.35	68.48	68.88	72.10	71.58	70.25	71.00
13.....	70.30	69.88	70.00	70.02	70.95	67.25	68.72	69.05	71.60	71.25	69.78	71.10
14.....	70.22	70.32	70.18	70.45	70.68	67.75	68.50	69.08	73.65	71.32	70.18	71.60
15.....	70.20	70.48	70.28	69.98	70.48	70.10	68.90	69.58	72.30	71.00	70.82	71.30
16.....	70.12	70.22	70.35	70.62	69.80	70.55	68.85	70.62	71.95	70.65	70.75	71.35
17.....	70.38	69.88	69.52	70.35	70.22	69.65	68.80	69.58	71.00	70.90	70.15	70.95
18.....	69.78	70.12	70.05	70.45	71.15	69.80	68.98	69.82	73.15	71.05	70.00	70.42
19.....	69.00	70.80	69.98	70.20	70.02	69.70	69.15	69.20	72.60	71.42	69.95	69.50
20.....	70.40	69.48	70.30	70.55	70.42	70.02	69.00	77.15	72.40	71.60	70.10	67.65
21.....	70.30	70.02	70.38	70.92	70.12	69.60	69.10	76.35	72.00	71.42	69.38	67.98
22.....	70.18	69.75	70.32	69.25	70.05	70.12	68.90	74.05	71.85	71.78	69.18	70.10
23.....	69.90	70.02	70.88	71.08	70.88	70.45	68.85	74.55	72.35	71.65	68.90	71.15
24.....	70.28	70.15	69.75	70.35	71.30	71.35	68.72	73.35	71.90	72.05	68.70	68.80
25.....	69.95	70.32	69.98	70.62	71.62	71.10	68.50	74.20	71.68	71.45	68.40	70.72
26.....	69.95	70.72	69.62	70.42	70.70	69.80	68.60	77.95	71.82	70.85	68.80	70.40
27.....	69.02	70.20	70.15	70.82	70.50	69.40	68.60	76.10	71.45	70.85	68.35	71.20
28.....	69.92	70.40	70.02	71.62	69.65	69.75	68.70	75.02	71.15	70.85	68.42	69.60
29.....	70.72	69.98	70.15	70.95	69.75	69.82	68.38	......	70.95	70.20	68.48	69.15
30.....	70.02	69.58	69.78	71.58	70.00	70.10	68.60	......	71.30	70.32	68.30	70.25
31.....	69.65	69.90	......	73.48	......	68.20	69.12	......	71.65	......	68.45	......

This station, established October 19, 1916, is located at the upper end of lock No. 3. The water-surface indicated is that above the dam of the West Virginia Pulp and Paper Company. The gage, No. 106, is a standard Type A gage in two sections. The lower section is secured to the nosing at the upper end of the east lock wall and has a range of 11½ feet, between elevations 65.5 and 77.0. The upper section is secured to the face of the old abutment at the upper end of the east lock wall and has a range of 8 feet, between elevations 77.0 and 85.0. Standard bench-mark plugs are set near the gages, for the lower section at elevation 76.0 (B. C. datum) and for the upper section at elevation 80.0 (B. C. datum).

The gage is read twice daily — morning and afternoon — to hundredths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER ABOVE DAM NO. 3 AT MECHANICVILLE, for the year ended June 30, 1918. Chas. A. Ehren, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	69.96	67.80	70.33	70.09	73.70	69.81	69.05	68.50	69.70	71.85	70.50	68.72
2.....	70.20	68.34	70.78	70.47	73.22	71.62	68.70	68.16	69.57	72.46	70.16	68.46
3.....	70.06	67.76	70.83	70.30	73.00	69.88	68.42	68.50	69.76	73.05	70.48	68.52
4.....	69.90	67.92	70.20	70.40	72.62	69.88	68.98	68.32	69.46	73.15	70.68	68.22
5.....	69.24	68.23	70.85	70.22	72.24	70.24	68.10	68.89	69.25	72.81	70.68	68.12
6.....	68.90	68.10	70.46	70.38	71.86	70.14	67.70	69.45	69.50	72.28	69.75	67.86
7.....	68.45	69.24	70.36	70.70	71.56	70.16	67.62	68.90	69.25	71.98	69.64	67.66
8.....	68.78	68.31	70.36	70.22	71.42	70.04	68.46	68.00	69.14	71.65	69.50	69.41
9.....	68.28	70.26	70.60	70.01	71.42	70.72	68.24	67.35	69.38	71.70	69.82	70.00
10.....	68.18	70.28	69.54	69.96	71.16	66.48	68.25	67.98	69.21	71.96	69.76	69.90
11.....	67.28	70.48	70.10	69.66	71.20	66.84	68.30	68.38	68.44	71.86	69.91	71.56
12.....	67.66	70.80	69.56	69.73	67.90	67.31	68.36	68.60	68.92	71.56	70.32	71.02
13.....	70.18	70.22	70.32	70.04	70.94	67.22	68.36	68.75	68.68	71.21	69.97	71.28
14.....	70.83	70.40	70.32	70.52	70.72	67.94	68.13	68.38	69.46	71.38	70.38	71.56
15.....	70.56	70.51	70.35	69.98	70.66	70.19	68.48	68.30	69.21	71.00	70.82	71.41
16.....	70.42	70.40	70.46	70.71	69.90	70.60	68.53	68.96	69.11	70.66	70.66	71.56
17.....	70.20	70.02	69.70	70.52	70.34	*a*	68.28	69.12	69.48	70.90	70.40	71.22
18.....	69.96	70.29	70.14	70.41	70.86	70.24	68.63	69.42	69.80	71.06	69.96	70.55
19.....	69.12	70.84	70.28	70.52	70.41	70.01	68.88	67.94	69.96	71.26	69.86	69.62
20.....	70.50	69.90	70.15	70.64	70.50	*a*	68.69	72.02	70.12	71.60	69.86	67.75
21.....	70.42	70.47	70.48	70.90	70.25	*a*	68.68	70.20	70.60	71.42	69.44	67.86
22.....	70.92	70.02	70.66	69.36	70.11	70.16	68.42	69.90	71.02	71.72	69.24	70.28
23.....	69.98	70.16	70.96	71.18	70.85	71.05	68.29	69.88	71.50	71.52	69.04	71.30
24.....	70.46	70.24	70.08	70.55	71.39	71.48	67.88	69.52	71.68	71.95	68.96	70.36
25.....	70.07	70.41	70.02	70.86	71.66	*a*	67.89	69.45	71.44	71.40	68.53	70.79
26.....	69.85	70.85	69.85	70.72	70.68	69.70	68.02	70.86	71.56	70.90	68.58	70.58
27.....	69.56	70.36	70.20	70.81	70.50	69.35	68.14	70.28	71.41	70.87	68.61	70.14
28.....	70.00	70.61	70.11	71.62	69.70	69.80	68.26	69.98	71.20	70.85	68.72	69.75
29.....	70.94	70.15	70.28	71.11	69.96	69.90	66.91	......	71.02	70.28	68.56	69.43
30.....	70.30	69.84	69.66	71.64	70.18	69.95	67.61	......	71.35	70.34	68.40	70.25
31.....	69.82	70.06	......	73.60	......	68.05	68.85	......	71.65	......	68.51	......

a No record.

HUDSON RIVER BELOW DAM No. 3, MECHANICVILLE

This station, established October 19, 1916, is located at the lower end of lock No. 3. The water-surface indicated is that below the dam of the West Virginia Pulp and Paper Company and at the upper end of the pool above the dam of the Adirondack Electric Power Corporation. The gage, No. 105, is a standard Type A gage in two sections. The lower section is secured to the nosing at the lower end of the east wall of the lock and has a range of 10½ feet, between elevations 46.0 and 56.5. The upper section is secured to the lower end of the east thrust wall of the lock and has a range of 12 feet, between elevations 56.5 and 68.5. Standard bench-mark plugs are set in the walls near the gages, for the lower section at elevation 52.0 (B. C. datum) and for the upper section at elevation 59.0 (B. C. datum).

The gage is read twice daily — morning and afternoon — to hundredths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER BELOW DAM No. 3 AT MECHANICVILLE, for the year ended June 30, 1918. Chas. A. Ehren, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	49.86	47.97	48.32	47.90	52.33	48.02	48.15	48.19	51.12	53.04	51.45	49.58
2	50.00	47.96	48.22	48.00	51.88	48.46	48.04	47.94	50.70	53.98	51.58	49.46
3	49.86	47.98	48.14	47.88	51.24	48.34	48.08	48.00	50.32	54.75	51.43	49.20
4	49.50	48.08	47.99	48.21	50.68	48.51	48.25	47.76	50.61	54.87	51.78	48.92
5	49.60	48.00	48.36	48.00	50.48	48.42	48.00	48.10	50.09	54.49	50.95	48.67
6	49.02	47.90	48.26	47.94	50.05	48.16	47.95	48.06	50.22	53.78	50.52	48.46
7	48.90	47.86	48.06	47.92	49.80	48.36	47.92	48.02	50.63	52.86	50.45	48.42
8	48.62	47.86	48.06	47.96	49.72	48.15	48.06	48.08	49.92	52.82	50.30	48.90
9	48.94	48.05	48.14	48.02	49.42	48.40	48.15	48.06	49.60	52.84	50.70	48.82
10	48.86	47.95	47.94	48.02	49.26	48.34	47.96	47.93	48.98	53.40	50.72	49.22
11	48.09	47.90	47.98	48.00	48.74	48.19	47.94	47.92	49.56	53.12	50.80	50.17
12	48.06	48.10	47.91	48.12	48.58	47.98	47.92	48.20	49.56	52.76	50.40	49.85
13	48.49	48.06	47.88	48.03	49.08	48.12	47.88	48.02	49.28	52.30	50.29	49.88
14	48.17	48.24	47.96	48.24	48.92	48.10	47.91	48.25	50.35	51.75	51.38	50.17
15	48.35	48.00	47.98	48.16	48.44	48.15	47.97	48.75	50.02	51.72	52.18	49.94
16	48.32	48.26	47.87	48.46	48.28	48.14	48.08	49.98	49.95	51.45	52.02	49.70
17	48.20	47.92	47.80	48.18	48.10	*a*	48.07	48.26	49.34	51.86	51.52	49.66
18	47.86	48.00	47.94	48.21	48.34	48.10	48.12	48.82	50.98	52.02	51.04	49.08
19	48.00	47.97	47.98	48.16	48.41	48.18	48.14	48.50	51.00	52.40	50.45	48.90
20	48.74	47.89	47.99	48.36	48.42	*a*	48.06	54.42	51.40	52.82	50.52	48.10
21	48.25	48.19	48.20	48.26	48.24	*a*	48.18	51.96	51.80	51.88	50.42	48.38
22	48.22	48.05	47.98	48.15	48.27	48.10	48.02	50.96	52.22	52.81	49.94	48.37
23	48.38	47.92	47.78	48.60	48.76	47.75	48.12	51.00	52.54	52.82	49.87	48.39
24	48.33	48.00	47.90	48.49	49.22	48.05	48.26	50.38	52.30	52.35	49.75	48.50
25	47.91	48.00	47.92	48.48	48.30	*a*	48.12	50.88	52.50	52.61	49.41	48.86
26	48.10	48.40	47.98	48.33	48.70	48.10	48.06	53.10	52.68	52.02	49.05	48.61
27	47.93	48.04	47.90	48.76	48.44	48.00	48.00	52.26	52.40	51.92	49.42	48.35
28	47.96	48.03	47.85	48.67	48.14	48.24	48.10	51.78	51.98	51.25	49.40	48.10
29	48.38	47.87	47.90	48.96	48.06	48.00	48.11	......	51.82	51.18	49.39	48.18
30	47.94	47.91	47.92	49.83	48.02	48.05	48.08	......	52.22	51.18	49.21	48.22
31	48.09	47.85	......	52.31	......	48.06	48.02	......	52.36	......	49.40	......

a No record.

HUDSON RIVER AT MECHANICVILLE

Location.— At the Duncan dam of the West Virginia Pulp and Paper Company in Mechanicville, Saratoga county, ¾ mile above the mouth of Anthony kill, 1½ miles below the mouth of Hoosic river and about 19 miles above the mouth of Mohawk river at Cohoes.

Drainage area.— 4,500 square miles.

Records available.— 1888 to 1918.

Gage.— Water-stage recorder at the dam, installed in 1910; previous to that date staff gage.

Computations of discharge.—Discharge over spillway determined from a rating curve based on United States Geological Survey coefficients for dams of ogee section. Discharge through turbines computed from records of their operation.

Extremes of discharge.— Current year: Maximum daily discharge, 35,500 second-feet, April 3. Minimum daily discharge, 556 second-feet, Sunday, January 20.

1888–1918: Maximum discharge recorded, 120,000 second-feet at 6 A. M., March 28, 1913.[*] The plant is occasionally shut down and the flow of the river is stored in the pond, so that the discharge below the station occasionally becomes practically zero.

Diversions.— Water diverted above this station into the Champlain canal. No correction made for this diversion. During 1915 a Barge canal lock through the Duncan dam was completed and put in operation. The water used by the lock is included in this record.

Coöperation.— Records computed and furnished by Mr. W. J. Barnes, Engineer of the West Virginia Pulp and Paper Company.

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[*] Highest known flood prior to this time occurred April, 1869. Calculated dischage, 70,000 second-feet. See Water-Supply Paper 65, page 51, and report of U. S. Board of Engineers on Deep Waterways. Part 1. pages 377–388.

Daily discharge, in second-feet, of HUDSON RIVER AT WEST VIRGINIA PULP AND PAPER CO.'S MILL (UPPER DAM), MECHANICVILLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	10,400	1,430	2,950	1,190	19,800	3,720	1,870	1,620	8,370	25,800	15,000	7,070
2	11,900	1,570	1,610	1,430	16,800	4,170	1,870	1,060	7,430	30,600	17,800	5,510
3	10,900	1,400	1,400	1,750	14,300	3,900	1,830	638	8,050	35,500	14,800	5,960
4	8,040	2,100	2,480	2,120	11,300	3,840	1,810	685	6,840	35,200	15,000	4,540
5	7,960	1,310	3,380	2,010	10,200	3,250	1,810	638	6,040	30,800	13,400	4,750
6	6,410	1,250	2,850	2,020	8,600	3,180	1,160	584	6,980	26,500	11,200	4,280
7	5,040	1,600	2,460	1,640	7,580	3,040	1,610	1,340	6,510	23,200	9,700	4,060
8	4,630	1,290	2,470	2,440	6,460	2,840	1,600	1,850	5,390	22,500	9,500	5,050
9	4,840	1,680	1,490	1,940	6,120	2,500	1,610	1,780	5,680	24,300	10,000	5,720
10	4,100	1,520	1,670	1,980	5,270	2,250	1,620	587	6,150	25,200	11,400	5,660
11	2,380	1,790	1,570	1,600	2,800	1,900	1,540	614	5,940	23,900	11,100	7,320
12	2,650	1,720	1,260	1,530	4,910	1,880	1,500	1,050	5,250	21,200	10,700	6,060
13	3,690	1,960	1,240	1,980	4,750	1,950	795	749	5,820	19,200	11,300	6,670
14	3,370	2,540	1,480	1,570	4,520	2,040	1,400	2,520	6,640	17,800	15,200	7,140
15	2,730	2,050	1,420	2,740	4,020	2,480	1,220	4,080	6,190	16,900	16,900	6,590
16	3,340	2,970	963	3,490	3,760	2,670	1,420	4,210	5,740	16,000	15,800	5,490
17	3,460	2,150	1,230	3,280	3,720	2,830	1,130	1,200	8,150	17,200	13,700	5,320
18	2,810	2,500	1,710	3,390	3,160	2,480	606	3,570	9,920	18,800	11,700	5,130
19	3,450	1,870	1,600	3,440	3,710	2,520	606	5,840	11,700	20,500	9,450	4,770
20	4,120	1,800	1,640	3,340	3,870	2,710	576	22,400	14,200	20,900	11,200	4,020
21	3,890	2,310	1,880	2,310	3,580	2,810	741	9,610	16,400	19,500	8,430	3,300
22	2,990	1,680	1,870	3,320	3,760	2,850	1,760	7,230	18,600	23,200	8,070	4,070
23	3,370	1,520	1,380	4,300	3,920	2,080	1,940	6,960	20,900	22,400	6,710	3,380
24	3,850	1,570	1,940	3,590	5,440	3,120	2,050	6,350	21,100	24,200	6,710	3,940
25	2,680	2,380	1,980	3,770	4,450	2,220	2,010	7,830	22,700	19,600	5,480	4,790
26	2,170	1,780	1,770	4,440	4,680	2,700	1,720	16,000	22,500	17,500	5,560	4,130
27	1,660	1,830	1,830	4,650	4,090	2,360	1,140	11,300	20,600	15,600	6,200	3,980
28	1,940	2,670	1,710	4,790	2,940	2,170	1,250	9,950	19,100	14,100	6,450	3,100
29	2,180	1,940	1,400	5,310	2,700	2,000	1,900	......	19,000	12,700	5,990	2,820
30	1,820	1,610	899	12,000	2,600	1,350	1,480	......	20,600	14,400	5,750	1,600
31	2,270	2,030	......	20,100	......	1,790	1,110	......	22,400	......	6,090	......
Mean	4,360	1,870	1,770	3,660	6,130	2,600	1,440	4,720	12,000	21,800	10,500	4,870

Monthly discharge of HUDSON RIVER AT WEST VIRGINIA PULP AND PAPER CO.'S MILL (UPPER DAM), MECHANICVILLE, for the year ended June 30, 1918

[Drainage area, 4,500 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	11,900	1,660	4,360	0.969	1.12
August	2,970	1,250	1,870	0.416	0.48
September	3,380	899	1,770	0.393	0.44
October	20,100	1,190	3,660	0.813	0.94
November	19,800	2,600	6,130	1.36	1.52
December	4,170	1,350	2,600	0.578	0.67
January	2,050	576	1,440	0.320	0.37
February	22,400	584	4,720	1.05	1.09
March	22,700	5,250	12,000	2.67	3.08
April	35,500	12,700	21,800	4.84	5.40
May	17,800	5,480	10,500	2.33	2.69
June	7,320	1,600	4,870	1.08	1.20
The year	35,500	576	6,300	1.40	19.00

NOTE.— Figures in this table do not include diversion into Champlain canal.

HUDSON RIVER AT TOLL BRIDGE, MECHANICVILLE

This station, established August 16, 1905, is located at the highway bridge crossing the Hudson river at Mechanicville, commonly known as Toll bridge, about 2 miles above the lower dam and about ¾ mile below the upper dam. The gage is a standard chain gage located on the upstream side of the first span from the west end of the bridge. Readings are taken twice daily — at 8 A. M. and between 4:30 and 5:30 P. M.— to half-tenths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER AT TOLL BRIDGE, MECHANICVILLE, for the year ended June 30, 1918. Byron Stedman, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	49.82	48.10	48.10	47.88	52.25	48.32	48.30	48.38	51.15	52.98	51.45	49.85
2.....	50.30	48.08	48.10	48.10	51.60	48.45	48.16	48.38	50.75	53.80	51.95	49.18
3.....	49.75	48.08	48.05	48.15	51.25	48.60	48.32	48.35	50.35	54.62	51.35	49.30
4.....	49.45	48.10	48.15	48.25	50.55	48.35	48.35	48.15	50.60	54.62	51.60	49.00
5.....	49.30	48.00	48.50	48.25	50.40	48.35	48.22	48.55	50.20	54.25	50.90	48.80
6.....	49.05	47.92	48.25	48.22	49.80	48.25	48.02	48.48	50.28	53.50	50.72	48.85
7.....	48.85	47.95	48.25	48.15	49.72	48.20	48.32	48.38	50.62	52.80	50.40	48.50
8.....	48.35	48.10	48.10	48.18	49.65	48.02	48.38	48.45	50.02	52.70	50.35	49.00
9.....	48.90	48.15	48.10	48.32	49.40	47.88	48.25	48.35	49.62	52.65	50.68	49.20
10.....	48.82	48.25	48.00	48.28	49.35	48.45	48.30	48.18	49.02	53.12	50.72	49.35
11.....	48.02	48.20	48.05	48.18	48.45	48.32	48.28	48.10	49.70	52.95	50.80	50.30
12.....	48.02	47.98	48.00	48.15	48.62	48.25	48.15	48.55	49.60	52.62	50.42	49.85
13.....	48.58	48.18	48.05	48.18	49.08	48.35	48.10	48.32	49.45	52.12	50.72	49.98
14.....	48.30	48.28	48.18	48.08	48.80	48.05	48.22	48.42	50.32	51.72	51.38	50.30
15.....	47.85	47.90	48.00	48.05	48.52	48.22	48.20	48.90	50.00	51.62	52.10	50.25
16.....	48.22	48.15	47.92	48.35	48.40	48.18	48.30	50.50	50.00	51.40	51.90	49.62
17.....	48.30	48.05	47.98	48.25	48.32	48.40	48.32	48.60	49.55	51.55	51.50	49.68
18.....	48.25	48.15	48.02	48.15	48.25	48.50	48.38	49.05	51.00	51.88	51.05	49.20
19.....	48.25	48.15	48.10	48.15	48.35	48.42	48.48	48.55	51.15	52.30	50.30	48.92
20.....	48.75	48.22	48.12	48.38	48.42	48.48	48.42	54.20	51.55	52.55	50.85	48.45
21.....	48.32	48.32	48.18	48.05	48.30	48.30	48.35	52.05	51.80	51.90	50.28	48.20
22.....	48.00	48.05	47.70	48.30	48.30	48.35	48.25	51.05	52.10	52.72	50.15	48.42
23.....	48.20	48.08	48.00	48.82	48.85	48.15	48.45	51.00	52.42	52.60	49.80	48.15
24.....	48.58	48.15	48.10	48.40	49.15	48.12	48.45	50.42	52.30	53.08	49.72	48.52
25.....	48.05	48.20	48.08	48.30	48.20	48.25	48.30	51.05	52.42	53.95	49.32	48.98
26.....	48.22	48.20	48.05	48.58	48.65	48.38	48.38	53.22	52.60	51.92	48.92	48.62
27.....	48.05	48.15	48.25	48.75	48.35	48.25	48.15	52.25	52.25	51.75	49.50	48.50
28.....	47.92	48.38	47.90	48.25	48.32	48.25	48.38	51.68	51.90	51.20	49.60	48.35
29.....	47.95	48.12	48.15	49.05	48.15	48.32	48.38	......	51.75	51.05	49.38	48.20
30.....	48.10	48.00	47.90	49.80	48.20	48.38	48.15	......	52.08	51.20	49.30	48.12
31.....	48.15	48.12	......	52.12	......	48.25	48.38	......	52.38	......	49.50	......

HUDSON RIVER ABOVE DAM No. 2, MECHANICVILLE

This station, established October 19, 1916, is located at the upper end of lock No. 2, and is practically a continuation of the station, "Hudson River above Dam of Adirondack Electric Power Corporation." The gage, No. 104, is a standard Type A gage secured to the splay wall at the upper end of the lock and has a range of 12 feet, between elevation 44.0 and 56.0. A standard bench-mark plug is set in the wall near the gage at elevation 52.0 (B. C. datum).

The gage is read twice daily — morning and afternoon — to half-tenths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER ABOVE DAM No. 2 AT MECHANICVILLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	49.32	47.72	47.80	47.75	50.85	47.85	47.80	47.95	49.70	51.45	50.50	49.45
2	49.60	47.85	47.85	47.80	50.40	47.80	47.80	47.65	49.40	52.00	50.55	48.70
3	48.95	47.82	47.80	47.95	50.25	47.95	47.80	47.45	49.25	52.75	50.50	48.80
4	49.10	47.82	47.80	47.92	49.75	47.95	47.75	47.55	49.30	52.85	50.70	48.60
5	48.85	47.78	48.10	47.82	49.70	47.90	47.65	47.80	49.15	52.55	50.20	48.30
6	48.48	47.55	47.90	47.85	49.30	47.85	47.65	47.70	49.15	51.95	49.90	48.45
7	48.42	47.82	47.90	47.85	49.15	47.80	47.60	47.80	49.50	51.25	49.60	48.15
8	47.90	47.80	47.82	47.95	49.00	47.60	47.70	47.88	49.10	51.35	49.35	48.40
9	48.45	47.82	47.85	47.95	48.95	47.65	47.75	47.85	48.70	51.35	49.95	48.35
10	48.35	47.95	47.78	47.90	48.85	47.85	47.55	47.60	48.20	51.70	49.75	48.75
11	47.50	47.82	47.78	47.95	48.40	47.70	47.75	47.80	48.55	51.50	49.95	49.30
12	47.82	47.65	47.70	47.90	48.20	47.90	47.75	47.90	48.75	51.45	49.78	49.25
13	48.10	47.80	47.70	47.85	48.65	47.75	47.80	47.70	48.55	50.90	49.80	49.40
14	47.82	47.98	47.80	47.85	48.30	47.80	47.70	47.85	49.35	50.55	49.95	49.70
15	47.75	47.55	47.75	47.95	48.20	47.80	47.80	48.05	49.15	50.45	51.15	49.35
16	47.85	47.70	47.60	48.15	47.95	47.85	47.80	49.85	49.25	50.25	50.95	49.15
17	47.82	47.80	47.65	47.80	47.70	47.95	47.80	47.85	48.55	50.45	50.50	49.25
18	47.62	47.75	47.75	47.80	47.75	47.75	47.80	48.05	49.90	50.70	50.30	48.80
19	47.78	47.75	47.60	48.05	48.00	47.90	47.85	48.10	50.20	50.98	49.65	48.42
20	48.38	47.75	47.75	48.00	48.05	47.80	47.80	50.80	50.35	51.30	50.15	48.00
21	48.45	47.95	47.70	47.70	47.70	47.70	47.90	50.05	50.50	50.60	49.75	47.90
22	47.60	47.78	47.75	47.95	48.20	47.75	47.72	49.30	50.80	50.85	49.55	48.05
23	47.90	47.75	47.65	48.30	48.35	47.85	47.75	49.00	51.25	51.30	49.15	48.05
24	48.02	47.80	47.80	48.10	48.70	47.75	47.95	48.95	51.05	51.55	49.20	47.90
25	47.68	47.80	47.75	48.00	48.00	[a]	47.80	49.15	51.00	51.15	48.90	48.45
26	47.75	47.90	47.75	48.05	48.15	47.80	47.80	50.75	51.30	50.90	48.35	48.25
27	47.70	47.82	47.75	48.30	48.00	47.65	47.75	50.20	50.90	50.80	48.90	48.10
28	47.58	48.00	47.70	48.30	47.85	47.90	47.80	49.90	50.70	50.25	49.00	47.75
29	47.75	47.75	47.70	48.50	47.70	47.75	47.80	......	50.55	50.20	49.00	47.90
30	47.78	47.80	47.65	49.15	47.75	47.75	47.55	......	50.85	50.10	48.85	47.80
31	47.90	47.80	......	50.85	......	47.75	47.70	......	50.95	......	48.80	......

[a] No record.

HUDSON RIVER BELOW DAM No. 2, MECHANICVILLE

This station, established September 1, 1917, is located at the lower end of lock No. 2, and is practically a continuation of the station, "Hudson River below Dam of Adirondack Electric Power Corporation." The gage, No. 103, is a chain gage secured to the downstream side of the bridge across the lower end of lock No. 2. This gage gives elevations direct and has a range of 23 feet, between elevations 21.5 and 44.5.

The gage is read twice daily — morning and afternoon — to half-tenths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER BELOW LOWER DAM No. 2 AT MECHANICVILLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	......	......	......	*	34.05	30.65	23.55	23.15	28.7	33.2	33.75	31.85
2	......	......	......	30.25	33.4	30.25	23.6	23.3	28.4	33.95	34.3	31.4
3	......	......	......	30.35	32.75	30.75	23.9	23.55	27.95	34.9	33.85	31.55
4	......	......	......	30.6	30.85	31.0	23.9	23.15	28.15	35.6	33.9	31.15
5	......	......	......	30.4	32.8	31.0	23.7	23.25	28.05	35.3	33.35	31.05
6	......	......	......	30.45	32.55	30.85	23.3	23.1	27.95	33.8	33.05	31.05
7	......	......	......	30.45	32.2	30.8	23.3	23.25	28.55	32.95	32.65	31.0
8	......	......	......	30.5	32.0	30.75	23.55	23.65	27.65	32.85	32.55	31.05
9	......	......	......	30.45	31.8	30.6	23.6	23.45	26.9	32.9	32.8	30.3
10	......	......	......	30.4	31.65	30.55	23.55	22.5	26.25	33.6	32.7	31.5
11	......	......	......	30.4	31.35	30.5	23.3	22.35	26.6	33.2	32.85	32.0
12	......	......	......	30.4	31.15	30.55	23.55	22.8	26.85	33.15	32.6	31.45
13	......	......	......	30.45	31.5	30.5	23.2	22.65	26.65	32.2	32.65	32.6
14	......	......	......	30.5	31.3	30.6	23.45	23.55	27.55	31.85	32.9	32.35
15	......	......	......	30.6	31.2	30.85	24.1	24.8	27.7	31.65	34.15	32.1
16	......	......	......	31.1	30.95	30.6	23.6	27.05	28.25	31.55	34.1	31.85
17	......	......	......	30.8	31.0	30.65	23.3	24.05	27.25	31.75	33.55	31.95
18	......	......	......	31.0	30.8	30.75	23.25	26.4	29.45	32.35	33.3	31.5
19	......	......	......	30.95	30.7	30.8	23.3	25.9	30.0	33.35	31.7	31.3
20	......	......	......	31.0	30.8	28.25	23.2	32.2	30.5	33.3	32.85	31.05
21	......	......	......	30.8	30.9	25.2	23.05	30.1	31.25	32.5	32.75	30.85
22	......	......	......	30.85	31.0	25.0	23.95	27.7	32.0	33.1	32.2	31.1
23	......	......	......	31.2	31.25	23.85	23.15	27.3	32.55	34.05	33.0	31.3
24	......	......	......	30.5	31.6	24.65	24.35	26.9	32.4	35.7	31.85	30.95
25	......	......	......	31.2	31.0	*a*	23.35	27.75	32.55	34.9	31.75	31.4
26	......	......	......	31.15	31.3	24.2	23.2	30.75	32.85	33.3	31.15	31.15
27	......	......	......	31.25	31.1	23.7	23.1	30.5	32.5	32.3	31.6	31.0
28	......	......	......	31.1	30.7	23.65	22.95	29.6	32.05	33.5	31.7	30.75
29	......	......	......	31.5	30.7	23.8	23.9	......	31.85	33.45	31.6	30.95
30	......	......	......	32.05	30.6	23.3	23.95	......	32.05	33.25	31.6	30.25
31	......	......	......	34.8	......	23.55	23.4	......	32.2	......	31.5	......

* No record. Gage readings began October 2.
a No record.

HUDSON RIVER AT DAM OF ADIRONDACK ELECTRIC POWER CORPORATION (LOWER DAM), MECHANICVILLE

Location.— At the dam of the Adirondack Electric Power Corporation across the Hudson river, which is the lower dam in the village of Mechanicville, about 2½ miles below the upper, or Duncan dam of the West Virginia Pulp and Paper Company.

Drainage area.— 4,570 square miles.

Records available.— Water-surface elevations, August 18, 1905, to June 30, 1918. Discharge, October 1, 1897, to June 30, 1918.

Gages.— The gage above the dam is a vertical staff attached to a crib upstream from the power-house. Lower gage is a reference point on the hand-rail of downstream truss of highway bridge to Barge canal lock about 150 yards below power-house. This gage indicates elevation in tail-race.

Discharge computations.— Discharge is determined by the flow over the crest of the dam and the water passed through the wheels of the power company.

Extremes of discharge.— Current year: Maximum daily mean recorded, April 4, as 39,400 second-feet. Minimum daily mean recorded, September 30, as 1,500 second-feet.

1897–1918: Maximum water-surface above dam recorded, elevation 58.5 on March 28, 1913, at 8 A. M.; discharge estimated by Department of State Engineer as about 94,000 second-feet. Minimum daily mean recorded, on August 29, 1909, at 24 second-feet.

Coöperation.— Records of flow over the dam and through the wheels are computed and furnished by the Adirondack Electric Power Corporation through Mr. George E. Fifield, Local Superintendent, to which are added estimated amounts of water used for canal purposes.

Daily discharge, in second-feet, of HUDSON RIVER AT DAM OF ADIRONDACK ELECTRIC POWER CORPORATION (LOWER DAM), MECHANICVILLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	11,000	2,420	3,460	1,540	23,300	3,590	2,780	2,210	11,300	28,800	18,100	9,250
2	12,800	3,020	2,980	1,890	21,500	5,240	2,730	2,050	10,300	33,400	20,500	7,390
3	11,900	2,300	2,060	1,900	18,700	3,550	2,450	2,040	9,170	34,000	17,600	6,990
4	10,200	3,130	2,660	2,980	14,000	4,060	2,670	1,930	10,200	39,400	18,400	7,030
5	9,830	2,510	4,610	2,670	13,000	4,070	2,350	1,990	8,840	38,000	15,800	6,180
6	8,500	2,710	4,300	2,540	10,900	3,840	1,890	2,620	9,260	33,700	14,900	6,260
7	6,940	2,620	3,500	2,350	9,070	3,760	1,680	2,160	10,300	29,400	12,600	5,840
8	5,100	2,380	3,080	2,840	7,960	3,140	2,410	2,080	8,760	27,500	11,300	6,490
9	6,300	2,400	2,530	3,080	6,880	3,090	2,270	2,070	7,180	28,400	12,300	6,080
10	6,110	2,460	2,280	2,690	6,800	2,570	2,370	1,770	5,860	31,700	13,400	7,600
11	3,730	1,940	2,400	2,290	5,440	2,060	2,120	1,890	6,250	29,900	12,300	10,800
12	3,950	2,480	2,130	2,090	4,940	2,120	2,130	1,980	7,100	27,900	12,600	9,270
13	5,360	2,280	2,040	2,490	6,720	2,210	1,900	2,190	7,050	25;500	13,200	9,300
14	4,800	3,410	1,980	2,200	5,470	2,190	2,060	2,740	9,490	23,000	15,500	10,600
15	3,560	2,950	1,980	2,600	5,370	3,220	2,810	4,410	8,060	21,900	19,200	9,810
16	5,090	3,570	1,550	4,670	4,880	2,640	2,340	10,500	8,940	21,400	19,300	8,850
17	5,070	3,020	1,520	4,210	4,870	3,310	2,190	3,730	8,280	22,100	18,300	8,670
18	4,500	3,060	2,070	4,530	4,000	3,500	2,050	9,970	13,100	23,500	18,300	6,740
19	4,060	2,350	2,120	4,130	3,990	3,080	2,170	5,250	13,400	25,900	16,100	6,140
20	6,150	2,680	2,200	4,480	4,780	3,230	2,120	22,700	15,900	26,800	17,100	5,360
21	5,220	2,500	2,410	3,490	4,430	3,200	2,070	13,700	18,900	22,800	16,700	4,620
22	4,020	2,170	1,680	3,430	4,320	3,700	2,280	9,220	21,100	27,300	16,400	5,480
23	4,460	2,220	1,950	5,700	5,610	2,900	2,250	8,170	24,700	27,500	15,700	4,250
24	5,060	2,010	1,800	4,780	6,640	3,340	2,230	6,960	23,900	29,600	15,000	4,790
25	3,820	2,500	2,680	4,830	5,140	2,550	2,340	8,390	20,600	26,000	10,500	6,070
26	3,220	2,600	2,320	4,960	5,320	3,140	2,220	15,200	26,500	22,100	7,180	5,640
27	2,720	2,390	2,450	5,760	5,340	2,850	2,030	15,500	25,100	20,400	8,250	5,240
28	1,980	3,010	2,500	5,520	3,500	2,670	1,970	12,400	24,000	17,000	8,310	4,340
29	4,050	2,740	2,280	6,590	3,650	3,040	2,190	......	22,500	16,600	8,950	3,770
30	3,020	2,200	1,500	9,930	3,380	2,470	2,220	......	23,300	16,900	8,200	3,250
31	3,250	2,340	......	21,900	......	2,440	2,290	......	24,300	......	8,360	....
Mean	5,670	2,593	2,434	4,357	7,663	3,122	2,245	6,279	14,311	26,613	14,205	6,743

Monthly discharge, in second-feet, of HUDSON RIVER AT DAM OF ADIRONDACK ELECTRIC POWER CORPORATION (LOWER DAM), MECHANICVILLE, for the year ended June 30, 1918

[Drainage area, 4,570 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	12,800	1,980	5,670	1.24	1.43
August	3,570	1,940	2,593	0.567	0.65
September	4,610	1,500	2,434	0.533	0.59
October	21,900	1,540	4,357	0.953	1.10
November	23,300	3,380	7,663	1.68	1.87
December	5,240	2,060	3,122	0.684	0.79
January	2,780	1,680	2,245	0.491	0.57
February	22,700	1,770	6,279	1.37	1.43
March	26,500	5,860	14,311	3.13	3.61
April	39,400	16,600	26,613	5.82	6.49
May	20,500	7,180	14,205	3.11	3.58
June	10,800	3,250	6,743	1.48	1.65
The year	39,400	1,500	8,003	1.75	23.76

This station, established October 19, 1916, is lo
upper end of lock No. 1. The gage, No. 102, is
Type A gage secured to the upper end of the east
recess and has a range of 20 feet, between elevatio
39.0. A standard bench-mark plug is set in the w
gage at elevation 38.0 (B. C. datum).

The gage is read twice daily — at 7 A. M. and 3
half-tenths and even hundredths.

**Daily elevation of water-surface (B. C. datum) of HUDSON RIVER ABO
NEAR WATERFORD, for the year ended June 30, 1918. Arthur
Wm. H. Gaillard, Observers**

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	
1.....	32.15	30.54	31.04	30.30	32.63	30.78	18.70	18.86	23.42	25.41	
2.....	32.42	30.62	30.76	30.38	32.13	31.38	18.80	19.17	23.12	26.48	
3.....	32.23	30.34	30.45	30.45	31.72	30.90	18.90	18.39	23.52	27.96	
4.....	32.03	30.55	30.48	30.74	31.60	31.04	18.90	18.42	23.19	28.29	
5.....	31.94	30.44	30.09	30.52	32.58	31.14	18.80	18.52	22.98	27.60	
6.....	31.43	30.38	30.92	30.59	32.25	30.90	18.80	20.01	21.96	26.39	
7.....	31.48	30.38	30.81	30.58	32.03	30.88	18.65	19.60	22.95	25.26	
8.....	31.10	30.36	30.78	30.58	31.92	30.75	18.55	19.64	22.40	25.38	
9.....	31.38	30.44	30.78	30.62	31.74	30.91	18.65	19.65	21.38	25.14	
10.....	31.35	30.44	30.60	30.58	31.64	30.70	18.55	18.95	21.10	25.95	
11.....	30.68	30.45	30.55	30.48	31.24	30.46	18.40	18.45	21.76	25.58	
12.....	30.64	30.78	30.42	30.55	31.16	30.48	18.40	18.75	21.70	25.02	
13.....	31.05	30.39	30.38	30.62	31.51	30.52	18.70	18.75	21.20	26.35	
14.....	30.98	30.80	30.36	30.58	31.22	30.52	18.35	19.34	22.56	28.02	
15.....	30.86	30.70	30.48	30.58	31.17	30.84	19.00	19.98	21.95	27.64	
16.....	31.06	30.93	30.32	31.10	30.90	30.66	19.02	23.70	22.44	27.04	
17.....	31.08	30.68	30.40	30.95	31.04	30.71	18.25	21.06	21.08	28.55	
18.....	30.90	30.85	30.40	31.04	30.82	30.75	18.45	22.60	22.91	28.25	
19.....	30.76	30.64	30.44	30.89	30.89	30.75	18.50	21.87	23.26	31.26	
20.....	31.25	30.50	30.40	31.05	31.16	29.44	18.40	26.85	23.82	29.70	
21.....	31.11	30.62	30.45	30.98	31.02	21.39	18.60	24.85	24.65	26.60	3
22.....	31.01	30.58	30.42	30.74	30.92	*b*	18.90	23.72	25.11	28.58	3
23.....	31.04	30.42	30.31	31.41	31.22	19.01	19.10	23.80	25.16	30.88	3
24.....	31.14	30.43	30.39	31.12	31.62	*b*	19.15	23.40	24.92	34.36	3
25.....	30.87	30.60	30.56	31.18	31.25	*b*	18.90	23.48	24.81	33.95	3
26.....	30.62	30.72	30.48	31.18	31.24	*b*	18.49	25.80	25.13	31.01	3
27.....	30.60	30.55	30.48	31.35	31.16	*b*	19.08	25.42	24.48	29.06	31
28.....	30.60	30.62	30.46	31.29	30.85	*b*	19.17	24.25	24.58	32.94	31
29.....	30.92	30.61	30.44	31.48	30.78	*b*	19.87	......	23.80	32.82	31
30.....	30.62	30.44	30.32	31.84	30.78	*b*	19.90	......	24.20	32.87	31
31.....	30.68	30.49	......	33.12	......	*b*	19.42	......	24.45	......	31

b Water below gage.

NOTE.— All Taintor gates closed, July 1 to October 30, November 4 to December 1
to April 25, April 27 to June 30; one gate open, October 31 to November 4, and Decemb
gates open, December 21 to February 27; five gates open February 28 to March 21; all
March 22 to April 12; two to four gates open, April 13 to April 22; four gates open Apri

HUDSON RIVER BELOW DAM No. 1, NEAR WATERFORD

This station, established October 19, 1916, is located at the lower end of lock No. 1. The water-surface indicated is at the upper end of the pool maintained by the new Federal dam at Troy. The gage, No. 101, is a standard Type A gage in two sections. The lower section is secured to the north end of the west lower approach wall and has a range of 13 feet, between elevations 12.0 and 25.0. The upper section is secured to the lower end of the lower west thrust wall and has a range of 11 feet, between elevations 25.0 and 36.0. Standard bench-mark plugs are set in the walls adjacent to the gages, the one for the lower section being at elevation 24.0 (B. C. datum) and the one for the upper section being at elevation 27.0 (B. C. datum).

The gage is read twice daily — at 7 A. M. and 3 P. M. — to half-tenths and even hundredths.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER BELOW DAM No. 1 NEAR WATERFORD, for the year ended June 30, 1918. Arthur T. Wilson and Wm. H. Gaillard, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	19.48	17.05	17.72	16.90	22.54	17.80	16.91	16.99	22.17	22.18	19.71	18.48
2.....	19.52	17.05	17.50	16.82	21.37	18.25	17.11	17.01	22.02	22.94	20.82	18.08
3.....	19.10	16.71	17.22	17.03	21.60	18.02	17.00	16.87	21.28	23.90	20.10	18.09
4.....	18.90	16.82	16.78	17.28	19.41	18.05	17.10	16.85	21.35	23.94	20.09	18.06
5.....	18.54	17.06	17.65	17.00	19.46	18.02	17.01	16.83	20.75	23.38	19.70	17.88
6.....	18.36	16.91	17.42	17.46	19.18	17.95	16.91	17.03	20.78	22.50	19.42	17.82
7.....	18.06	16.72	17.23	17.20	18.84	17.65	16.88	16.89	21.68	21.67	19.05	17.78
8.....	17.90	16.82	17.22	17.19	18.75	17.60	16.89	16.93	21.08	21.63	18.95	17.90
9.....	17.88	16.88	17.18	17.14	18.65	17.28	17.01	16.95	20.25	21.75	19.02	17.75
10.....	18.05	17.22	16.95	17.13	18.26	17.20	16.99	16.71	19.83	22.85	18.85	17.80
11.....	17.60	17.56	17.02	17.29	18.08	16.95	16.94	16.70	19.86	22.35	19.22	18.50
12.....	18.25	17.02	17.02	17.15	17.98	16.85	17.07	16.81	19.99	21.80	19.00	18.52
13.....	18.10	16.94	16.88	17.12	18.38	*17.00	16.85	17.00	19.98	21.16	19.12	19.15
14.....	17.88	17.18	16.83	17.44	18.02	*17.00	16.92	17.16	21.16	20.98	20.42	19.22
15.....	18.12	17.08	16.84	17.45	18.01	17.30	17.09	18.20	20.90	21.24	20.65	18.90
16.....	18.35	17.45	16.77	18.28	17.82	16.95	17.07	18.99	20.72	20.88	20.27	18.38
17.....	18.05	17.20	16.82	17.91	17.82	17.26	17.07	18.55	20.10	20.94	19.60	18.38
18.....	17.91	17.40	16.85	17.72	17.78	17.24	17.04	18.49	20.60	21.18	19.42	18.06
19.....	17.88	17.10	16.86	17.68	17.70	17.88	16.91	18.26	21.98	21.96	18.95	17.98
20.....	18.22	16.95	16.84	18.00	18.04	17.98	16.99	22.70	22.40	22.35	18.85	17.58
21.....	17.96	16.96	16.80	18.27	17.80	18.40	17.04	24.52	20.32	21.04	19.02	17.40
22.....	17.92	16.98	16.76	18.08	17.76	18.01	17.00	21.68	23.79	21.98	18.68	17.52
23.....	17.55	16.78	16.92	18.18	18.06	17.45	17.04	21.14	23.30	21.66	18.42	17.75
24.....	17.72	16.99	16.80	17.92	18.92	17.38	16.94	20.93	22.82	22.42	18.35	17.70
25.....	17.45	17.95	16.80	18.54	18.28	17.40	17.06	21.31	22.36	21.44	18.24	18.02
26.....	17.18	17.80	16.90	18.77	18.04	17.40	16.88	24.10	22.26	21.89	17.97	18.24
27.....	17.40	17.08	17.00	18.58	17.80	17.38	16.80	24.01	21.57	19.92	18.38	17.72
28.....	16.99	17.12	16.84	18.47	17.77	17.31	16.83	22.96	21.02	19.91	18.48	17.48
29.....	17.22	17.39	16.92	18.88	17.69	17.25	16.99	......	20.91	19.83	18.44	17.32
30.....	17.00	17.08	16.95	19.70	17.60	17.12	16.96	......	21.23	19.78	18.29	17.00
31.....	17.25	17.25	......	23.98	......	16.95	16.91	......	21.50	......	18.15	......

*Estimated.

This station is located at the upper end of the Federal lock at Troy and indicates the water-surface of the Hudson river above the Federal dam, completed November 18, 1915. The gage is an inlaid tile vertical staff on the east lock wall and is read twice daily to tenths. The zero of this gage is 2 feet below mean sea-level and 1.13 feet below Barge canal datum.

Records are taken and furnished by the United States Engineer Office, Albany, N. Y. Records obtained during construction prior to October 1, 1915, have not been published.

Daily elevation of water-surface (B. C. datum) of HUDSON RIVER ABOVE FEDERAL DAM AT TROY, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	19.0	17.0	17.6	16.7	21.1	17.8	17.1	16.6	19.5	20.8	19.4	18.1
2.....	18.9	16.9	17.4	16.7	20.3	18.1	17.0	16.6	19.3	21.2	19.7	18.0
3.....	18.7	16.7	17.2	16.8	19.7	17.9	17.1	16.6	19.2	21.8	19.5	17.8
4.....	18.5	16.1	16.8	17.2	19.1	17.7	17.0	16.7	19.0	21.6	19.2	17.8
5.....	18.2	17.0	17.6	17.1	18.9	17.8	16.9	16.6	19.1	21.3	19.1	17.7
6.....	18.1	16.7	17.2	17.1	18.6	17.8	16.9	16.4	19.1	21.0	18.8	17.7
7.....	17.9	16.5	17.1	17.1	18.5	17.6	16.9	16.5	19.1	20.3	18.6	17.7
8.....	17.7	16.6	17.3	17.2	18.5	17.4	16.9	16.7	19.1	20.2	18.6	17.8
9.....	17.7	16.8	16.8	17.2	18.2	17.5	16.8	16.7	18.9	20.4	18.5	17.6
10.....	17.8	17.1	16.9	17.1	18.0	17.2	16.8	16.7	18.8	21.1	18.5	18.0
11.....	17.5	17.5	16.9	17.0	17.9	17.2	16.8	16.7	18.6	20.9	18.7	18.3
12.....	17.9	17.0	17.0	17.0	17.8	17.2	16.9	16.7	18.3	20.7	18.6	18.3
13.....	17.9	16.8	16.8	17.1	18.0	17.2	17.1	16.8	18.5	20.4	18.6	18.9
14.....	17.9	17.3	16.8	17.3	17.9	17.2	17.1	17.2	18.5	20.2	19.4	18.7
15.....	18.0	16.9	16.8	17.2	17.8	17.1	17.1	17.8	19.3	20.3	20.0	18.5
16.....	18.3	17.3	16.6	18.1	17.9	17.0	17.0	18.6	19.2	20.2	19.6	18.2
17.....	18.0	17.1	16.8	17.8	17.7	16.9	17.0	18.5	19.0	20.1	19.1	18.2
18.....	17.8	17.2	16.6	17.7	17.7	16.8	16.9	18.3	19.7	20.3	18.9	18.0
19.....	17.8	17.0	16.7	17.6	17.7	16.6	16.9	18.4	20.1	20.8	18.4	17.7
20.....	18.0	16.9	16.7	17.9	17.7	16.7	16.9	19.8	20.4	20.7	18.6	17.5
21.....	17.8	16.8	16.6	18.2	17.7	17.3	16.9	21.2	20.9	20.5	18.5	17.4
22.....	17.7	16.9	16.7	18.0	18.3	17.3	16.8	19.3	21.5	20.6	18.4	17.5
23.....	17.6	16.8	16.7	18.1	17.7	17.3	16.8	18.7	22.0	20.9	18.4	17.7
24.....	17.6	16.9	16.6	18.0	17.9	17.4	16.9	18.4	21.7	20.9	18.2	17.6
25.....	17.4	17.9	16.7	18.4	17.6	17.4	16.9	18.4	21.1	20.4	18.0	17.7
26.....	17.1	17.6	16.7	18.6	17.7	17.2	16.9	19.5	20.9	20.1	17.9	17.6
27.....	17.3	17.2	16.8	18.3	17.7	17.2	16.9	20.4	20.4	19.3	18.2	17.6
28.....	16.9	17.1	16.8	18.3	17.6	17.1	16.8	20.8	20.0	19.2	18.4	17.4
29.....	17.2	17.2	16.9	18.7	17.6	17.1	16.9	......	20.0	19.2	18.4	17.2
30.....	16.9	17.1	16.8	19.6	17.5	17.1	16.7	......	20.2	19.1	18.0	17.0
31.....	17.2	17.2	....	22.7	......	17.1	16.7	......	20.4	......	18.0	......

HUDSON RIVER BELOW FEDERAL DAM, TROY

This station, established May 1, 1916, is located at the lower end of the Federal lock at Troy and indicates the water-surface of the Hudson river below the Federal dam. The gage is an inlaid tile vertical staff on the east lock wall. The zero of this gage is 16 feet below mean sea-level and 15.13 feet below Barge canal datum. The water-surface was affected by the remains of the old State dam until July 26, 1916, when the removal of the old structure was completed.

Beginning July 1, 1917, the record at this station is that of lower low tide and lower high tide. The elevations are referred to the plane of lowest low water in this vicinity (see description under "Hudson River at Albany," page 351).

Daily record of elevation of LOWER HIGH TIDE IN HUDSON RIVER BELOW FEDERAL DAM AT TROY, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	7.7	5.4	6.2	5.8	14.5	6.2	4.9	4.6	11.0	11.7	8.3	6.6
2.....	7.8	5.8	6.4	5.9	11.4	5.5	5.0	5.1	10.7	13.4	8.8	6.3
3.....	8.0	5.8	6.0	6.5	8.9	6.5	5.1	5.0	10.4	14.5	8.1	5.6
4.....	7.9	5.4	5.7	6.8	6.8	6.0	4.6	5.2	9.0	14.1	8.0	5.8
5.....	7.2	6.0	5.5	6.5	7.5	6.5	5.0	5.0	8.8	13.0	7.9	5.3
6.....	7.2	5.8	5.5	6.0	6.6	5.6	3.0	5.2	9.4	12.7	7.9	5.9
7.....	6.7	5.5	5.9	5.9	5.9	6.2	4.9	5.0	9.7	11.3	7.9	6.0
8.....	6.5	5.0	6.4	5.5	5.5	6.6	4.7	5.0	9.8	10.5	6.7	6.0
9.....	6.2	5.1	6.7	5.9	5.6	6.6	4.4	5.3	9.1	11.0	6.8	5.7
10.....	6.3	5.7	4.4	5.6	5.7	5.4	4.2	5.0	9.2	12.6	7.7	6.5
11.....	6.7	5.7	6.6	5.6	6.3	3.0	4.4	5.1	7.6	12.7	7.7	7.3
12.....	6.9	6.2	5.4	7.0	5.7	4.0	6.6	5.3	7.5	11.0	7.8	7.5
13.....	7.0	5.0	6.3	6.0	6.7	5.0	5.0	5.5	8.5	10.8	7.9	7.2
14.....	6.9	5.5	5.6	5.4	6.0	5.6	4.1	5.6	10.8	9.9	9.4	6.9
15.....	7.0	5.9	5.1	6.4	6.1	3.9	5.5	7.8	10.8	10.8	9.1	6.0
16.....	6.7	5.8	5.7	6.3	6.1	4.5	4.4	7.4	9.4	10.4	8.7	5.7
17.....	6.5	5.9	5.9	6.0	6.0	4.8	4.8	7.1	8.9	10.0	7.7	5.8
18.....	6.6	5.8	5.7	6.6	6.3	4.8	5.0	7.0	10.8	10.9	6.7	5.7
19.....	6.3	5.8	5.7	6.4	5.8	5.1	4.9	7.2	11.6	11.5	6.2	4.8
20.....	6.0	4.0	6.2	6.2	6.6	5.4	4.8	16.8	12.0	11.6	6.7	4.9
21.....	6.0	5.7	5.8	6.3	6.2	5.4	4.7	17.6	12.7	10.9	6.3	5.8
22.....	6.1	5.3	6.4	6.0	6.9	5.0	4.6	13.1	13.8	11.7	5.9	6.8
23.....	5.8	6.1	6.1	6.1	7.2	4.7	4.7	11.1	15.2	12.2	5.7	5.1
24.....	6.0	6.4	5.7	8.6	7.0	5.0	4.7	9.4	14.7	11.7	5.9	5.1
25.....	5.7	4.6	6.4	6.9	5.2	4.7	5.3	9.1	12.8	10.5	6.0	6.1
26.....	5.9	6.7	6.6	6.7	5.0	4.8	4.9	12.2	12.2	9.6	5.8	6.2
27.....	6.1	5.5	6.7	6.9	5.4	4.8	4.6	14.0	10.3	9.0	7.5	6.2
28.....	5.6	6.6	5.9	6.8	6.6	5.0	4.6	12.9	9.7	8.0	7.1	6.8
29.....	6.7	6.8	6.1	6.2	5.7	4.4	5.6	......	9.2	8.2	6.4	6.2
30.....	4.3	5.4	6.5	*a*	6.8	4.5	4.7	......	10.1	8.0	6.6	6.0
31.....	5.0	5.4	......	*a*	......	4.8	4.9	......	10.5	......	6.6	......

a No record.

NOTE.— Elevations are referred to an assumed plane of lowest low water in this locality, which is two feet below mean sea-level. To reduce to Barge canal datum, subtract 1.13 feet.

Daily record of elevation of LOWER LOW TIDE IN HUDSON RIVER BELOW FEDERAL DAM AT TROY, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	5.3	2.1	2.0	1.0	11.8	2.5	1.8	2.1	10.0	9.8	6.6	3.8
2.....	4.9	2.1	2.4	2.2	11.0	2.5	2.8	1.6	9.5	10.9	7.2	2.8
3.....	4.9	1.8	2.2	2.0	7.5	1.8	3.0	2.4	9.3	12.9	6.7	2.8
4.....	5.0	1.5	1.6	1.7	5.0	3.8	2.7	2.6	9.0	13.8	6.0	2.9
5.....	4.0	1.3	2.4	2.0	5.4	3.0	1.9	1.4	7.4	12.0	6.2	3.2
6.....	4.4	2.4	1.7	1.5	5.4	2.7	1.5	1.8	7.4	10.6	5.1	2.8
7.....	4.1	1.4	1.4	1.8	3.6	2.5	2.6	2.5	8.4	9.6	5.1	3.6
8.....	3.1	1.0	1.4	2.5	3.7	2.4	3.0	3.1	8.7	9.2	4.7	3.2
9.....	2.7	2.8	1.7	1.9	3.5	2.2	1.8	2.5	7.4	9.8	4.6	3.4
10.....	2.8	1.5	1.4	1.9	3.2	1.9	1.6	2.5	7.2	11.2	5.5	3.2
11.....	3.0	1.5	1.0	2.2	3.1	0.5	1.5	2.4	5.5	11.4	5.1	4.5
12.....	4.0	2.2	1.6	3.7	2.2	1.5	2.2	3.0	5.8	10.8	5.3	4.8
13.....	3.0	2.3	1.5	2.0	2.0	2.5	2.4	3.4	6.4	9.6	5.4	5.2
14.....	3.0	2.3	1.3	2.4	1.9	2.6	2.1	3.2	8.4	9.0	6.4	5.3
15.....	2.8	2.3	1.5	2.9	2.3	2.6	2.9	4.7	8.5	8.5	8.1	3.8
16.....	3.2	1.7	2.2	3.8	2.8	1.6	2.2	5.0	7.4	9.1	7.5	3.2
17.....	3.4	2.5	1.8	3.4	2.7	1.5	2.5	5.4	7.4	9.0	5.6	3.2
18.....	3.5	2.3	1.2	2.5	2.5	2.5	3.1	5.3	7.7	9.0	5.0	2.1
19.....	3.3	1.9	1.4	2.2	1.6	2.6	3.4	5.4	10.4	10.7	4.6	1.9
20.....	3.4	2.2	1.1	3.0	2.3	2.9	1.9	6.5	11.4	10.5	5.0	1.8
21.....	3.2	2.3	2.4	3.9	2.6	3.4	1.8	13.0	12.3	9.1	4.0	2.8
22.....	2.8	2.0	2.2	2.7	3.2	3.1	1.6	10.0	12.6	9.8	3.7	3.3
23.....	2.3	2.1	1.8	2.9	3.6	2.6	2.7	8.9	13.8	11.0	4.1	3.0
24.....	2.7	3.0	1.6	3.2	3.1	3.0	2.6	7.8	12.9	10.8	3.5	3.0
25.....	2.6	2.8	1.8	4.3	2.4	2.4	2.6	8.0	11.9	9.4	4.3	3.0
26.....	2.2	2.0	1.9	3.6	1.7	2.8	1.4	8.6	11.1	9.2	3.3	2.8
27.....	2.2	2.0	1.4	4.4	1.5	2.0	1.2	12.4	9.4	7.6	4.2	2.7
28.....	2.8	1.8	1.7	4.0	2.6	2.6	2.3	11.8	8.1	6.3	4.2	3.4
29.....	2.3	1.7	1.9	5.6	2.9	2.4	3.1	......	8.2	6.7	3.8	2.7
30.....	2.3	2.1	1.7	*a*	2.4	1.6	2.9	......	8.4	6.7	4.0	1.9
31.....	2.4	1.6	......	*a*	......	1.8	2.6	......	9.4	......	4.0	......

a No record.

NOTE.— Elevations are referred to an assumed plane of lowest low water in this locality, which is two feet below mean sea-level. To reduce to Barge canal datum, subtract 1.13 feet.

HUDSON RIVER AT ALBANY

The following tables, furnished by the United States Engineer Office, Albany, N. Y., through the courtesy of Mr. John D. Myton, Assistant Engineer in charge, give the elevations of the lower high and lower low tide recorded daily by the automatic tide gage at the foot of State street, Albany, during the year ended June 30, 1918.

The elevations are referred to an assumed plane of lowest low water in the Hudson river at this locality, which is 2.0 feet below the mean sea-level at Sandy Hook, N. J., or 15.863 feet below the elevation of "Greenbush" bench-mark, as published in the Annual Report of the U. S. Coast and Geodetic Survey for 1903, Appendix No. 3.

The plane of mean low tide at Albany, as determined from the mean of observations taken July 3 to November 17, 1876, was about 13.40 feet below the Greenbush bench-mark and, as determined by observations taken during the same period in 1908 and 1909, was about 13.80 feet below that bench-mark.

To reduce elevations in the tables to Barge canal datum, subtract 1.13 feet.

Daily record of elevation of LOWER LOW TIDE IN HUDSON RIVER AT ALBANY, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	5.48	5.13	5.90	5.55	9.85	5.84	4.80	......	8.07	8.67	5.99	6.10
2.....	5.99	5.45	6.02	5.00	7.90	3.60	4.88	......	7.85	9.30	6.71	*b*5.99
3.....	5.74	5.12	5.56	*c*5.42	6.69	4.34	4.63	......	6.81	10.35	*b*6.75	5.48
4.....	5.64	5.12	5.23	*c*6.17	5.12	*a*	4.58	......	6.53	9.88	6.29	5.37
5.....	5.66	5.63	5.23	5.36	5.02	*c*5.40	3.25	......	6.30	*b*9.33	6.63	5.32
6.....	5.82	5.82	5.82	5.05	*a*	4.94	*b*3.40	......	*b*7.02	8.59	6.44	5.59
7.....	6.04	5.41	4.72	4.41	*a*	*b*4.40	4.36	......	6.96	8.25	6.50	5.83
8.....	6.05	5.38	*b*4.71	5.13	4.90	4.69	5.06	......	7.49	8.04	6.03	4.93
9.....	6.35	5.66	4.98	*b*3.89	4.47	5.27	2.80	......	6.41	8.10	6.20	5.42
10.....	6.61	*b*4.87	3.50	4.74	4.99	3.00	3.47	......	6.10	9.01	7.10	5.50
11.....	6.33	4.76	4.71	5.24	5.10	1.91	3.37	......	4.24	9.67	5.97	6.36
12.....	*b*6.44	4.56	4.92	5.37	5.31	2.78	4.57	......	5.91	9.17	6.73	6.68
13.....	5.64	4.55	4.60	5.42	4.74	4.26	4.70	......	6.28	7.93	6.60	5.46
14.....	5.45	5.05	4.76	4.80	5.18	4.77	3.55	......	8.22	7.55	7.18	5.93
15.....	5.32	5.45	5.25	5.79	5.31	3.72	4.16	......	8.06	7.97	6.40	5.28
16.....	5.38	5.43	5.51	5.39	5.06	3.30	4.23	......	7.26	7.52	6.36	5.31
17.....	5.38	5.56	5.45	5.15	5.16	3.87	4.49	......	6.96	*b*7.79	*b*6.12	5.49
18.....	5.75	5.21	5.25	5.06	5.60	4.36	5.03	......	8.37	7.50	5.69	4.10
19.....	5.70	5.62	4.90	5.62	4.12	4.84	4.56	......	*b*9.82	8.45	5.60	4.21
20.....	5.49	5.71	5.19	5.06	5.66	4.88	3.49	......	9.67	8.18	5.80	4.11
21.....	5.46	5.31	5.04	4.83	5.42	4.96	*b*3.59	......	9.67	7.59	4.71	5.51
22.....	5.42	5.25	4.46	5.37	6.18	4.08	2.89	......	9.59	8.08	5.20	5.59
23.....	5.42	5.37	4.50	4.76	*b*6.52	4.45	4.46	......	10.23	8.69	5.04	4.30
24.....	5.55	5.74	4.70	*b*5.45	6.33	4.42	3.79	......	10.43	8.62	5.40	4.63
25.....	5.15	5.15	*b*4.64	6.51	5.03	3.64	4.54	......	9.39	7.52	5.62	5.36
26.....	5.04	4.02	5.00	5.97	4.26	4.13	4.63	......	8.84	7.23	5.21	5.71
27.....	4.66	*b*4.42	5.05	6.43	3.70	4.35	4.09	......	8.04	6.48	6.02	5.75
28.....	4.18	5.11	5.69	6.07	5.43	*b*5.08	4.42	......	6.95	6.68	5.48	6.33
29.....	*b*4.80	4.91	5.79	5.94	5.18	3.72	*a*	......	7.10	6.59	6.05	6.00
30.....	4.65	5.15	6.00	6.99	5.50	4.46	*a*	......	7.62	6.48	6.12	5.81
31.....	4.84	5.06	......	11.09	......	4.20	*a*	......	8.05	......	6.00	......

a No record. *b* One tide only recorded. *c* One reading only.

NOTE.— Record for February not available.

Elevations are referred to an assumed plane of lowest low water in this locality, which is two feet below mean sea-level. To reduce to Barge canal datum, substract 1.13 feet.

Daily record of elevation of LOWER LOW TIDE IN HUDSON RIVER AT ALBANY, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	2.96	1.73	2.55	1.63	8.39	2.64	2.65	......	7.77	8.27	4.87	3.01
2.....	4.06	1.95	2.35	1.50	6.13	1.26	2.93	......	7.65	9.30	5.63	*b*2.49
3.....	3.56	1.44	1.84	*c*2.45	4.46	2.49	2.71	......	6.15	10.04	*b*4.78	2.18
4.....	2.79	1.52	1.53	2.43	3.52	*a*	2.67	......	6.31	9.25	4.46	2.10
5.....	2.87	1.82	2.05	2.28	4.05	*c*2.62	1.70	......	5.90	*b*8.58	4.47	2.06
6.....	2.51	2.01	2.15	1.58	*a*	2.03	1.34	......	*b*6.71	7.51	3.68	2.37
7.....	2.55	1.37	1.68	2.18	*b*2.45	*b*2.73	2.81	......	6.74	6.94	3.76	2.32
8.....	2.43	1.88	*b*2.20	1.65	2.82	2.85	2.32	......	6.59	6.77	3.44	2.08
9.....	2.71	2.14	1.66	*b*1.63	2.50	2.31	1.14	......	5.58	6.95	3.53	2.34
10.....	3.23	*b*1.55	0.86	1.77	2.42	1.45	1.62	......	5.39	8.84	4.36	2.70
11.....	2.69	1.76	1.56	2.30	2.62	0.40	1.49	......	3.25	8.30	3.60	3.53
12.....	*b*3.24	1.78	1.84	2.28	2.02	1.26	*b*3.12	......	5.26	7.52	4.02	3.93
13.....	2.63	1.75	1.47	2.23	2.74	2.34	2.90	......	7.10	6.59	4.26	3.87
14.....	2.48	2.38	1.57	1.89	2.21	2.28	1.38	......	8.33	6.57	6.22	3.53
15.....	2.56	2.55	1.82	2.65	2.60	1.64	1.79	......	6.99	6.84	5.48	2.86
16.....	2.84	2.39	2.01	2.91	2.10	1.50	2.07	......	6.67	6.50	4.62	2.55
17.....	2.45	2.35	1.93	2.25	2.48	1.72	2.02	......	6.56	*b*6.55	*b*4.00	2.61
18.....	2.86	2.06	1.79	2.46	2.40	2.56	2.51	......	8.54	6.54	3.57	1.69
19.....	2.83	2.12	1.72	3.26	1.82	2.78	2.66	......	*b*9.37	7.97	3.24	1.82
20.....	2.54	2.26	1.88	2.75	2.74	3.07	1.84	......	9.47	7.48	3.59	1.59
21.....	2.40	1.93	1.73	2.57	2.57	2.89	1.30	......	9.23	6.61	2.67	2.86
22.....	2.17	2.08	1.29	2.74	3.26	2.17	1.16	......	9.52	7.55	2.90	2.51
23.....	1.99	2.15	1.79	2.33	*b*4.06	2.46	2.24	......	10.51	8.04	2.56	1.36
24.....	2.20	2.87	1.72	*b*4.11	3.48	2.42	1.82	......	9.54	7.82	2.80	1.81
25.....	1.84	2.77	*b*1.87	3.89	1.98	1.86	2.53	......	8.70	6.50	2.73	2.29
26.....	1.85	1.68	1.68	3.50	1.39	2.28	2.59	......	7.83	5.73	2.48	2.41
27.....	1.63	*b*1.80	1.83	3.50	1.09	2.48	2.04	......	6.73	4.90	3.38	2.39
28.....	1.35	2.18	2.05	3.31	2.55	*b*2.66	2.25	......	5.82	4.97	2.83	2.86
29.....	*b*2.06	1.93	2.16	3.75	2.13	1.82	*a*	......	5.91	5.96	3.02	2.51
30.....	1.56	1.68	2.20	5.08	2.50	2.18	*a*	......	6.75	4.92	3.33	2.06
31.....	1.65	1.73	......	11.39	......	2.36	*a*	......	7.21	......	3.16	......

a No record. *b* One tide only recorded. *c* One reading only.

NOTE.— Record for February not available.

Elevations are referred to an assumed plane of lowest low water in this locality, which is two feet below mean sea-level. To reduce to Barge canal datum, substract 1.13 feet.

The following table, prepared by the Corps of Engineers, U. S. A., shows the difference in time between the occurrence of high or low tide at Albany and at various localities on the Hudson river from Troy to New York, also the amounts of mean tidal range at the same localities.

To obtain the actual time of any desired high or low tide at a given locality apply the correction indicated in the table to the time of the same tide at Albany.

LOCALITY	DISTANCE FROM ALBANY	DIFFERENCE	HIGH WATER		LOW WATER		MEAN RANGE
	Miles	+ or —	Hours	Minutes	Hours	Minutes	Feet
Troy (Congress St)	6½	Add	0	23	0	36	2.92
Albany	0	....	......	......	......	......	2.88
Castleton	8½	Subtract	0	56	1	00	2.75
New Baltimore	15	Substact	1	45	2	00	3.21
Stuyvesant	19	Subtract	2	08	2	29	3.50
Coxsackie	21	Subtract	2	35	2	57	3.66
Hudson	28	Subtract	3	00	3	55	4.08
Catskill	33	Subtract	3	16	3	56	4.20
Germantown	39	Subtract	3	48	4	26	4.10
Saugerties-Tivoli	44	Subtract	4	10	4	50	4.00
Rondout-Rhinebeck	56	Subtract	4	26	5	10	3.90
Poughkeepsie	70	Subtract	4	57	5	47	3.10
New York (Governor's Island)	145	Subtract	9	50	11	02	4.40

CEDAR RIVER

CEDAR RIVER NEAR INDIAN LAKE

Location.— At the steel highway bridge about 2 mil Indian Lake village, Hamilton county, 8 miles by ri Rock river, 10 miles by river below Wakely dam and miles above the mouth of Cedar river.

Drainage area.— 85 square miles. (Measured on U. logical Survey topographic maps.)

Records available.— July 15, 1911, to November 30, 19 station was discontinued.

Gage.— Chain, at downstream side of bridge; read by C Hill.

Discharge measurements.— Made from bridge or by wa

Channel and control.— Gravel and large boulders; fai manent.

Extremes of discharge.— Current year: Maximum stage r during current period, 9.0 feet at 5 P. M., October 30; dis 2,110 second-feet. Minimum stage, 2.5 feet at 6 A. M. P. M., September 27; discharge, 20 second-feet.

1911–1918: Maximum stage recorded, 18.7 feet abou night June 11, 1917; discharge, not computed. Minimun recorded, 2.10 feet at 4 P. M., September 27, 1915; disc about 5 second-feet.

Ice.— Stage-discharge relation affected by ice.

Regulation.— Cedar river flow is controlled by a lumber dam (Wakely dam), which is used to make flood waves durin spring for log-driving.

Accuracy.— Stage-discharge relation practically perm between dates of shift; affected by ice from December to M Rating curve well defined between 15 and 600 second-feet. read to quarter-tenths twice daily. Daily discharge ascert by applying mean daily gage height to rating table. Re good, except during log-driving operations in the spring.

Coöperation.— Station established and maintained by the Un States Geological Survey in coöperation with the Conserva Commission.

June 30, 1918

Date	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Aug. 8 *a*	J. W. Moulton	2.75	47.2
Aug. 9 *a*	J. W. Moulton	2.75	37.5

a Measurement made by wading.

Daily discharge, in second-feet, of Cedar River near Indian Lake, for the year ended June 30, 1918

Day	July	Aug.	Sept.	Oct.	Nov.	Day	July	Aug.	Sept.	Oct.	Nov.
1	538	30	68	38	1,640	16	62	27	38	107	86
2	478	36	74	33	774	17	60	42	34	86	74
3	422	33	62	27	538	18	52	42	34	62	130
4	370	34	50	33	215	19	44	36	34	80	155
5	320	34	42	44	184	20	57	34	40	155	422
6	215	30	50	122	164	21	62	27	42	174	184
7	184	27	42	42	164	22	62	28	36	130	47
8	80	34	36	54	215	23	62	36	30	146	34
9	86	62	42	38	226	24	80	42	27	164	62
10	62	68	42	28	226	25	86	36	27	226	42
11	80	42	36	27	204	26	57	33	24	215	33
12	100	36	42	44	155	27	42	27	20	164	27
13	80	27	38	93	130	28	33	42	26	344	27
14	68	33	34	93	114	29	36	50	27	396	25
15	62	34	34	86	100	30	34	52	34	1,460	25
						31	34	40	......	2,010	......
						Mean	129	37.2	38.8	217	214

Note.—Station discontinued, November 30, 1917. Discharge, November 29 and 30, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of Cedar River near Indian Lake, for the year ended June 30, 1918

[Drainage area, 85 square miles]

Month	Discharge in second-feet				Run-off
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	538	33	129	1.51	1.74
August	68	27	37.2	0.434	0.50
September	74	20	38.8	0.457	0.51
October	2,010	27	217	2.55	2.94
November	1,640	*a* 25	214	2.52	2.81

a Estimated.

INDIAN RIVER

INDIAN LAKE RESERVOIR AT INDIAN LAKE

Location.— At the masonry storage dam at the outlet of Indian lake, about 2 miles south of Indian Lake village, Hamilton county, and about 7½ miles above the confluence of Indian river with the Hudson.

Drainage area.—131 square miles, including about 9.3 square miles of water-surface of Indian lake at the elevation of crest of spillway. (Measured on U. S. Geological Survey topographic maps.)

Records available.— Records of stage and gate openings, July, 1900, to June 30, 1918.

Gages.— Elevation of water-surface in reservoir is determined by chain gage on the crest of the dam near the gate-house. Gage installed November 17, 1911, to replace staff gage previously maintained at the same point. Datum unchanged. Mean elevation of crest of spillway is at gage height, 33.4 feet. Widths of sluice-gate openings determined by gage scales at sides of gate-stems inside gate-house. Gages read by Lester Sevarie.

Extremes of stage.— Current year: Maximum elevation of water-surface in reservoir, 34.55 feet, July 2. Minimum elevation, 5.15 feet, February 25 and 26.

1900–1918: Maximum elevation recorded, 38.8 feet, March 28, 1913. Minimum elevation, 2.0 feet, March 9 to 18, 1907, and January 3 to 17, 1910.

Regulation.— At ordinary stages the discharge is completely regulated by the operation of the sluice-gates. Water is held in storage until needed to supplement the flow of the upper Hudson during the low-water period. This storage capacity of about 4.7 billion cubic feet provides for a discharge of approximately 600 second-feet for a period of 90 days.

Coöperation. — Station maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

For record of discharge from the reservoir, see Indian river near Indian Lake.

Daily gage height, in feet, of INDIAN LAKE RESERVOIR AT INDIAN LAKE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	34.5	32.35	24.9	17.95	21.8	23.65	16.7	9.5	6.2	12.15	27.85	33.5
2	34.55	32.1	24.85	17.65	22.1	23.6	16.4	9.25	6.5	13.3	28.25	33.6
3	34.5	31.9	24.75	17.35	22.3	23.55	16.15	9.0	6.4	14.55	28.55	33.65
4	34.4	31.7	24.65	17.1	22.5	23.5	15.9	8.75	6.4	15.45	28.85	33.65
5	34.3	31.45	24.55	16.95	22.65	23.45	15.65	8.5	6.35	16.0	29.05	33.65
6	34.2	31.2	24.5	17.0	22.75	23.35	15.4	8.25	6.6	16.55	29.1	33.85
7	34.1	30.9	24.6	17.05	22.85	23.25	15.15	8.0	6.9	16.95	29.3	34.0
8	34.05	30.6	24.6	17.1	22.9	23.15	14.9	7.7	7.2	17.45	29.55	34.0
9	34.0	30.4	24.5	17.15	23.05	23.05	14.65	7.5	7.5	18.1	29.85	34.0
10	33.95	30.2	24.3	17.15	23.15	22.9	14.4	7.3	7.8	18.7	30.05	34.0
11	33.9	29.9	24.1	17.1	23.2	22.7	14.1	7.1	8.1	19.1	30.3	34.0
12	33.9	29.6	23.9	17.1	23.25	22.45	13.85	6.9	8.05	19.5	30.55	33.8
13	33.9	29.2	23.7	17.15	23.3	22.2	13.65	6.7	8.0	19.8	30.8	33.75
14	33.85	28.9	23.45	17.3	23.35	21.95	13.45	6.5	7.95	20.05	31.2	33.65
15	33.85	28.55	23.2	17.45	23.4	21.65	13.25	6.3	7.9	20.3	31.5	33.6
16	33.75	28.3	22.85	17.6	23.4	21.3	13.05	6.1	7.85	20.75	31.7	33.6
17	33.7	28.15	22.5	17.7	23.45	20.9	12.65	5.9	7.8	21.4	31.9	33.65
18	33.55	28.0	22.15	17.8	23.5	20.55	12.45	5.7	7.75	22.2	32.05	33.6
19	33.35	27.9	21.8	17.9	23.55	20.2	12.25	5.6	7.9	22.9	32.15	33.55
20	33.15	27.75	21.5	18.0	23.65	19.9	12.05	5.5	8.2	23.4	32.25	33.5
21	33.1	27.55	21.15	18.2	23.75	19.65	11.85	5.4	8.5	23.75	32.4	33.5
22	33.1	27.3	20.8	18.3	23.85	19.4	11.6	5.3	8.7	24.55	32.5	33.5
23	33.05	27.0	20.5	18.45	23.95	19.2	11.4	5.25	8.85	25.15	32.6	33.5
24	33.05	26.7	20.15	18.5	24.0	19.0	11.2	5.2	9.15	25.55	32.7	33.5
25	33.0	26.4	19.8	18.85	24.05	18.8	11.0	5.15	9.6	25.8	32.85	33.55
26	33.0	26.3	19.45	19.0	24.05	18.5	10.85	5.15	10.0	26.05	32.9	33.55
27	32.95	26.15	19.15	19.15	24.05	18.2	10.65	5.5	10.4	26.2	33.0	33.5
28	32.9	25.8	18.85	19.35	24.05	17.9	10.45	5.9	10.7	26.65	33.1	33.6
29	32.85	25.6	18.55	19.55	23.9	17.6	10.25	......	11.0	27.0	33.2	33.6
30	32.85	25.35	18.25	20.35	23.75	17.3	10.0	......	11.3	27.45	33.3	33.6
31	32.6	25.1	......	21.25	......	17.0	9.75	......	11.55	......	33.4	......

Gate openings, in inches, at INDIAN LAKE RESERVOIR AT INDIAN LAKE, for the year ended June 30,1918

FROM		TO		Sluice-gate A open	Sluice-gate B open
Date	Hour	Date	Hour		
				Inches	*Inches*
July 17	7 P. M.	July 21	11 A. M.	30	....
July 30	7 P. M.	Sept. 1	7 P. M.	60	....
Aug. 7	7 A. M.	Aug. 15	6 P. M.	....	30
Aug. 21	4 P. M.	Aug. 25	7 P. M.	....	30
Aug. 28	6 A. M.	Sept. 6	6 P. M.	....	30
Sept. 8	7 P. M.	Sept. 12	6 A. M.	....	24
Sept. 12	6 A. M.	Oct. 5	6 A. M.	....	48
Sept. 15	5 P. M.	Oct. 6	4 P. M.	60	....
Oct. 10	5 P. M.	Oct. 13	3 P. M.	60	....
Nov. 28	6 P. M.	Dec. 21	6 A. M.	60	....
Dec. 11	6 A. M.	Feb. 27	7 A. M.	....	48
Dec. 25	6 A. M.	Feb. 27	7 A. M.	30	....
Mar. 3	7 A. M.	Mar. 5	6 P. M.	30	....
Mar. 3	7 A. M.	Mar. 5	6 P. M.	....	48
Mar. 11	5 P. M.	Mar. 19	1 P. M.	60	....
Mar. 11	5 P. M.	Mar. 19	1 P. M.	....	48
Apr. 20	1 P. M.	Apr. 20	9 P. M.	60	....
Apr. 20	9 P. M.	Apr. 21	7 A. M.	30	....
Apr. 21	7 A. M.	Apr. 21	1 P. M.	60	....
Apr. 23	3 P. M.	Apr. 23	11 P. M.	60	....
Apr. 24	10 P. M.	Apr. 26	5 A. M.	60	....
Apr. 26	1 P. M.	Apr. 27	11 A. M.	60	....
May 5	7 P. M.	May 6	7 P. M.	60	....

NOTE.— The main logway was open 15 feet during the following periods:

June 10, 7 A. M. to 10 A. M.
June 12, 7 A. M. to 6 P. M.
June 13, 10 A. M. to 2 P. M.
June 14, 9 A. M. to 6 P. M.
June 15, 2 P. M. to 6 P. M.

Location.— About ¾ mile below the State dam at the outlet of Indian lake, about 2 miles south of Indian Lake village, Hamilton county, 1 mile above the mouth of Big brook and 6½ miles above the mouth of Indian river.

Drainage area.— 132 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— July 1, 1912, to June 30, 1914; June 5, 1915, to June 30, 1918; also miscellaneous measurements in 1911.

Gage.— Gurley repeating hydrograph water-stage recorder, installed August 30, 1916. In standard wooden shelter on the right bank about ¾ mile below the dam, at same datum as staff gage previously used. The staff gage is still in place and used for checking the recorder. Recorder inspected by Lester Sevarie.

Discharge measurements.— Made from a cable or by wading at the head of the rapids about 150 feet below the gage.

Channel and control.— The gage is at the side of a pool about 500 feet wide, called the "lower frog-pond." The reef of coarse gravel at the outlet of this pool forms the control and is permanent.

Extremes of discharge.— Current year: Maximum stage from water-stage recorder, 4.85 feet at 7 A. M., June 12; discharge, 1,450 second-feet. Minimum stage from water-stage recorder, 0.11 foot, November 13 and 14; discharge, about 1.1 second-feet.

1900–1918: Maximum daily discharge, 4,730 second-feet, March 28, 1913, from records at Indian lake dam. Minimum stage from water-stage recorder, 0.11 foot, November 13 and 14, 1917; discharge, about 1.1 second-feet.

Winter flow.— Discharge relation not affected by ice.

Regulation.— Discharge at this station is regulated by the operation of gates at the dam.

Accuracy.— Stage-discharge relation permanent; not affected by ice. Rating curve well defined between 15 and 1,500 second-feet. Daily discharge ascertained by applying mean daily gage height to rating table for days when there have been no changes in the sluice-gate openings at Indian lake dam. Mean daily gage height determined by inspection of the hydrograph record. Discharge for days when gate openings are changed is mean of 24 hourly discharge values.

Coöperation. — Station maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

DISCHARGE MEASUREMENT.— The following discharge measurement was made June 22, 1918, by J. W. Moulton. Gage height, 1.51 feet; discharge, 85.8 second-feet.

Daily discharge, in second-feet, of INDIAN RIVER NEAR INDIAN LAKE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	418	545	573	623	4	278	600	402	4	8	9	24
2.....	453	526	316	603	3	278	600	388	3	9	10	25
3.....	418	526	313	603	2	275	600	368	203	6	10	26
4.....	392	526	307	603	2	272	600	363	338	4	10	26
5.....	363	508	304	603	2	272	550	356	265	3	65	27
6.....	331	508	252	150	2	270	550	353	4	2	292	31
7.....	301	716	9	4	1	270	545	347	3	2	258	55
8....	281	810	65	2	1	270	545	338	3	2	18	67
9.....	250	810	284	2	1	270	545	325	3	5	13	74
10.....	237	810	271	39	1	270	526	319	3	4	13	499
11.....	227	788	275	200	1	592	526	313	75	3	13	153
12.....	224	767	389	205	1	725	526	307	313	2	12	874
13.....	224	767	453	149	1	725	500	304	313	2	14	428
14.....	217	746	453	4	1	725	500	301	310	4	16	795
15.....	207	746	535	2	1	725	500	298	307	4	15	565
16.....	196	482	725	2	1	725	480	298	316	3	15	110
17.....	252	415	725	2	1	725	480	295	310	3	15	100
18.....	489	385	704	1	2	725	480	292	307	2	16	96
19.....	471	385	704	1	2	725	480	289	159	2	16	95
20.....	453	382	704	2	2	704	480	286	11	115	18	90
21.....	288	448	684	2	2	544	460	284	11	155	19	90
22.....	129	664	684	2	2	436	460	284	9	7	19	90
23.....	131	664	684	1	2	436	460	280	9	93	18	90
24.....	133	664	684	2	2	436	440	280	6	24	17	90
25.....	135	664	684	4	2	570	440	280	5	278	19	90
26.....	137	462	664	2	2	623	440	280	5	178	22	173
27.....	135	341	664	2	2	623	420	88	3	160	22	18
28.....	133	547	643	3	64	623	420	4	2	7	22	14
29.....	131	623	643	3	281	600	420	......	3	7	22	13
30.....	182	623	623	15	281	600	400	......	47	7	23	12
31.....	564	623	......	7	......	600	400	......	130	......	24	......
Mean...	274	596	501	124	22.4	513	496	297	113	36.7	34.7	161

NOTE.— Daily discharge, December 29 to January 6 and January 13 to 31, estimated from record at Indian lake dam.

Monthly discharge of INDIAN RIVER NEAR INDIAN LAKE, for the year ended June 30, 1918

[Drainage area, 132 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	564	131	274	2.08	2.40
August	810	341	596	4.52	5.21
September	725	9	501	3.80	4.24
October	623	1	124	0.939	1.08
November	281	1	22.4	0.170	0.19
December	725	270	513	3.89	4.48
January	600	400	496	3.76	4.34
February	402	4	297	2.25	2.34
March	338	2	113	0.856	0.99
April	278	2	36.7	0.278	0.31
May	292	9	34.7	0.263	0.30
June	874	12	161	1.22	1.36
The year	874	1	280	2.12	27.24

SCHROON RIVER

DESCRIPTION

Schroon river rises in Essex county, along the southern slopes of the highest mountains in the Adirondack group, flows in a general southerly direction for about 45 miles through Essex and Warren counties and joins the Hudson near Thurman. Its total drainage area is 550 square miles. Its headwaters reach an elevation of about 2,000 feet above mean tide; its mouth is at an elevation of about 600 feet.

Its basin is largely forested and contains considerable wild land and numerous lakes and ponds. The most important of these is Schroon lake, through which the river flows, which has a water-surface area of about 6.3 square miles. The only power-plants are at Warrensburg.

SCHROON RIVER AT RIVERBANK

Location.— At the steel highway bridge near Riverbank post-office, Warren county, near Tumblehead falls, about 9 miles below Schroon lake and about 9 miles above Warrensburg.

Drainage area.— 534 square miles.

Records available.— September 2, 1907, to June 30, 1918.

Gage.—Chain, on upstream side of bridge; datum unchanged; read by J. H. Roberts.

bridge.

Channel and control.— Gravel; occasionally shifting. Logs become lodged on the control for a portion of nearly every year.

Extremes of discharge.— Current year: Maximum stage recorded during year, 7.25 feet at 9 A. M. and 4 P. M., April 4; discharge, about 5,820 second-feet. Minimum stage recorded, 1.16 feet at 4 P. M., October 10; discharge, 89 second-feet.

1907–1918: Maximum stage recorded, 10.7 feet at 5 P. M., March 28, 1913; discharge, about 13,500 second-feet. Minimum stage recorded, 0.85 foot at 5 P. M., October 17, 1909; discharge, 28 second-feet.

Ice.— Stage-discharge relation affected by ice.

Regulation.— Flow affected by storage in Schroon and Brant lakes.

Accuracy.— Stage-discharge relation probably permanent during year. Affected by ice for a large portion of the period from December to March and by logs on the control for short periods in April, May and June. Rating curve well defined between 150 and 4,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good for periods when the stage-discharge relation is not affected by ice or logs; fairly good for other periods.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of SCHROON RIVER AT RIVERBANK, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
		Feet	*Sec.-ft.*
1917			
Aug. 6	C. C. Covert	1.72	245
Dec. 15 *a*	E. D. Burchard	3.08	394
1918			
Jan. 9 *a*	J. W. Moulton	2.41	257
Jan. 28 *b*	E. D. Burchard	2.34	207
Mar. 2 *b*	J. W. Moulton	2.85	324
Mar. 25	J. W. Moulton	4.35	1,380
April 1 *c*	J. W. Moulton	6.02	3,040
April 10 *c*	J. W. Moulton	6.07	3,660
May 3	J. W. Moulton	4.52	2,050
June 19 *c*	J. W. Moulton	3.86	1,090

a Measurement made through partial ice cover. *b* Measurement made through complete ice cover. *c* Gage height affected by logs on the control.

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	990	264	264	248	1,060	535	280	200	300	3,000	2,040	800
2.....	1,130	264	281	216	1,290	535	280	200	320	3,600	2,150	800
3.....	1,060	248	298	201	1,290	490	260	190	340	5,000	2,040	1,100
4.....	990	248	407	201	1,210	512	260	190	340	5,750	1,940	750
5.....	920	232	232	201	1,210	490	260	200	360	5,570	1,550	650
6.....	920	201	718	216	1,130	468	260	190	380	4,950	1,640	600
7.....	860	232	585	201	1,060	468	260	200	400	4,320	1,600	600
8.....	800	248	585	125	1,060	460	260	200	420	4,170	1,600	900
9.....	800	264	512	93	990	440	260	200	440	4,020	1,700	600
10.....	662	248	512	89	920	440	240	200	480	3,880	1,600	1,200
11.....	388	264	490	145	860	420	240	190	500	3,740	1,500	950
12.....	388	232	468	216	800	420	240	180	550	3,470	1,500	500
13.....	369	248	468	281	800	400	240	180	550	3,210	1,700	400
14.....	369	248	427	298	860	400	260	180	600	2,960	2,000	1,000
15.....	369	248	351	298	860	400	260	180	600	2,840	2,200	1,000
16.....	351	248	369	298	920	400	260	170	600	2,840	2,200	460
17.....	333	264	351	298	860	380	260	150	550	2,960	2,000	1,000
18.....	333	264	333	298	800	380	260	150	600	3,080	2,000	1,100
19.....	351	264	333	316	800	360	260	150	650	3,080	1,800	1,100
20.....	316	281	316	298	745	360	260	160	800	3,080	1,600	920
21.....	316	264	316	298	690	340	260	170	800	2,840	1,500	920
22.....	316	264	298	264	718	340	260	190	800	2,840	1,300	990
23.....	333	264	264	232	745	320	240	200	900	2,840	1,000	407
24.....	316	281	248	248	662	320	240	220	1,100	2,840	1,200	407
25.....	298	281	248	216	635	320	240	240	1,400	2,840	850	535
26.....	298	281	248	216	610	320	220	260	1,600	2,600	800	535
27.....	316	281	232	248	685	320	220	280	1,900	2,370	800	512
28.....	316	264	232	232	560	300	200	280	2,200	2,150	750	535
29.....	248	248	216	264	535	300	200	......	2,400	1,740	750	298
30	264	264	216	490	512	300	200	......	2,400	1,940	750	153
31.....	264	298	......	216	......	280	200	......	2,600	......	800	......
Mean...	516	258	361	241	862	394	246	196	899	3,350	1,510	724

NOTE.— Discharge, December 8 to April 3 and May 7 to June 19, estimated, because of ice or logs on the control, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of SCHROON RIVER AT RIVERBANK, for the year ended June 30, 1918

[Drainage area, 534 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	1,130	248	516	0.966	1.14
August	298	201	258	0.483	0.56
September	718	216	361	0.676	0.75
October	490	89	241	0.451	0.52
November	1,290	512	862	1.62	1.81
December	535	280	394	0.738	0.85
January	280	200	246	0.461	0.53
February	280	150	196	0.367	0.38
March	2,600	300	899	1.68	1.94
April	5,750	1,740	3,350	6.28	7.01
May	2,200	750	1,510	2.83	3.26
June	1,200	153	724	1.35	1.51
The year	5,750	89	796	1.49	20.26

Sacandaga river is one of the larger tributaries of the upper Hudson. It drains extensive portions of the southeast slope of the Adirondack region as well as a portion of the plateau lying north of Mohawk river and south of the Adirondack mountains. The headwaters of the stream rise in the slopes surrounding Lake Pleasant, Sacandaga and Piseco lakes. It is formed by three principal branches, which unite in the southeastern part of Hamilton county. The west branch is the outlet at Piseco lake, the middle branch is the outlet of Sacandaga and Pleasant lakes, the east and principal branch issues from a series of small ponds and lakes in the southwestern part of Warren county. Sacandaga lake, the highest of the tributary lakes in the headwaters, is about 1,700 feet above mean tide. The east and middle branches unite a few miles north of Wells and are joined by the west branch a short distance below Wells. The river then flows southeasterly to a point about five miles below Northville. Above Northville the drainage basin is rugged and almost completely forest-covered. From Northville to Conklingville the stream winds through a sandy valley flanked by steep slopes. The width of this valley averages about one mile from Northampton to Conklingville. Above Northampton is an extensive flat lying at an elevation of about 740 feet. This flat is drained by Mayville, Vly and Hann's creeks and contains extensive swamp areas. From Northville to Conklingville, a distance along the general course of the stream of about 22 miles, there is very little fall. The elevation at Conklingville is about 720 feet. Sacandaga river enters Hudson river at Luzerne at elevation about 540 feet. Between Northville and the mouth of the river there is a fall of about 180 feet (chiefly concentrated in the five miles below Conklingville) entirely unutilized. There are, in fact, no power developments on the Sacandaga.

The drainage area of this river, about 1,060 square miles, is largely in forest. The mean precipitation is high, being about 49 inches, whereas the mean for the whole Hudson drainage area above Mechanicville is only about 43 inches.

SACANDAGA RIVER NEAR HOPE

Location.— About 1½ miles below the junction of east and west branches, 3¼ miles above Hope post-office, Hamilton county, and 12 miles above Northville.

Drainage area.— 494 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— September 15, 1911, to June 30, 1918.

Gage.— Staff, in two sections, the lower inclined, the upper vertical; read by Melvin Willis.

Discharge measurements.— Made from cable about 100 feet below the gage or by wading.

Channel and control.— Rocky; probably permanent.

Extremes of discharge.— Current year: Maximum stage recorded during year, 6.7 feet at 6 P. M., October 30; discharge, 8,490 second-feet. Minimum stage recorded, 1.49 feet at 6 P. M., September 29; discharge, 69 second-feet.

1911–1918: Maximum stage recorded, 10.0 feet at 5:30 P. M., March 27, 1913; discharge, 24,800 second-feet. Minimum stage recorded, 1.17 feet at 7:55 A. M., September 30, 1913; discharge, about 20 second-feet.

Ice.— Stage-discharge relation affected by ice.

Accuracy.— Stage-discharge relation permanent; affected by ice for a large portion of the period, December to March, inclusive. Rating curve well defined between 60 and 10,000 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good for periods when the stage-discharge relation is not affected by ice. Results fair for other periods.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of SACANDAGA RIVER NEAR HOPE, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1918		*Feet*	*Sec.-ft.*
Jan. 8 [a]	E. D. Burchard	2.62	203
Jan. 29 [a]	J. W. Moulton	2.70	203
Jan. 30 [a]	J. W. Moulton	2.72	201

[a] Measurement made through complete ice cover.

Daily discharge, in second-feet, of SACANDAGA RIVER NEAR HOPE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	1,940	190	454	202	3,540	240	200	200	1,220	4,480	2,740	660
2	1,560	182	477	164	2,740	240	200	200	1,330	5,790	2,740	660
3	1,280	164	360	147	2,230	220	190	200	1,160	7,530	2,930	590
4	1,010	144	287	230	1,810	240	190	200	1,010	6,350	2,930	590
5	820	122	255	400	1,440	220	180	200	910	5,250	2,560	558
6	660	101	205	525	1,220	220	180	200	820	3,760	2,080	525
7	590	91	175	410	1,110	220	180	200	910	3,540	1,810	910
8	558	147	168	370	1,010	220	200	200	910	4,480	1,810	1,110
9	525	495	158	335	910	220	220	200	820	6,070	1,680	1,010
10	495	525	154	310	820	220	220	200	740	5,790	1,560	1,010
11	495	465	144	264	700	240	260	220	700	3,990	1,680	820
12	558	400	135	380	625	240	280	240	660	4,230	1,560	910
13	590	273	128	910	558	260	320	260	740	2,390	4,230	1,110
14	590	186	119	780	525	260	280	320	780	2,230	5,520	1,160
15	525	202	111	820	495	260	240	400	910	2,740	3,990	960
16	495	335	104	1,010	495	260	240	500	820	3,330	3,130	780
17	443	360	101	1,010	495	260	240	700	820	4,230	2,560	660
18	390	255	96	960	465	240	240	850	865	5,250	2,080	590
19	370	242	94	1,010	443	240	260	1,000	910	4,990	1,560	465
20	340	217	91	1,330	421	260	260	1,100	1,110	3,760	1,330	400
21	320	198	89	1,160	410	260	260	1,300	1,440	3,330	1,220	355
22	301	182	87	910	380	260	240	1,300	2,560	3,130	1,160	454
23	264	168	87	820	360	260	240	1,300	2,740	3,330	1,110	465
24	255	221	85	910	340	240	240	1,220	2,390	3,330	1,110	443
25	255	264	83	1,560	320	240	220	1,220	2,930	3,130	1,010	375
26	230	225	81	1,560	320	220	220	1,440	2,740	2,740	1,010	340
27	217	198	79	1,330	300	220	200	1,440	2,390	2,560	910	315
28	209	175	75	1,940	280	220	220	1,440	2,230	2,560	820	292
29	205	182	75	1,810	280	200	200	......	2,230	2,560	780	255
30	198	221	154	1,810	260	200	200	......	3,130	2,740	820	238
31	190	301	......	5,790	......	200	200	......	3,540	......	740	......
Mean	544	240	157	1,010	843	235	226	652	1,500	3,990	1,970	634

NOTE.— Discharge, November 22 to February 23, estimated, because of ice, from discharge measurements, weather records, study of gage-height graph and comparison with similar studies for Hadley.

Monthly discharge of SACANDAGA RIVER NEAR HOPE, for the year ended June 30, 1918

[Drainage area, 494 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	1,940	190	544	1.10	1.27
August	525	91	240	0.486	0.56
September	477	75	157	0.318	0.35
October	5,790	147	1,010	2.06	2.38
November	3,540	260	843	1.71	1.91
December	260	200	235	0.476	0.55
January	320	180	226	0.457	0.53
February	1,440	200	652	1.32	1.38
March	3,540	660	1,500	3.04	3.50
April	7,530	2,230	3,990	8.08	9.02
May	5,520	740	1,970	3.99	4.60
June	1,160	238	634	1.28	1.43
The year	7,530	75	998	2.02	27.48

SACANDAGA RIVER AT HADLEY

Location.— About ½ mile west of railroad station at Hadley, Saratoga county, 1 mile above mouth of river and 4½ miles below site of proposed storage dam at Conklingville.

Drainage area.— 1,060 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— January 1, 1911, to June 30, 1918. September 13, 1907, to December 31, 1910, at upper bridge station; September 24, 1910, to midsummer of 1911, at lower bridge station.

Gage.— Gurley hydrograph water-stage recorder in a concrete shelter on the left bank about ½ mile west of railroad station at Hadley.

This recorder was installed January 6, 1916, replacing a Barrett and Lawrence hydro-chronograph. Recorder inspected by J. F. Kelly.

Discharge measurements.— Made from a cable about 30 feet above the gage or by wading under the cable or wading about ¾ mile above gage.

Channel and control.— Very rough but permanent.

Extremes of discharge.— Current year: Maximum stage during year from water-stage recorder, 8.80 feet from 1 A. M. to 4 A. M., April 4; discharge, 13,900 second-feet. Minimum stage from water-stage recorder, 2.57 feet at 10 A. M., September 28; discharge, 165 second-feet.

1911–1918: Maximum stage from water-stage recorder, 12.36 feet from 11 A. M. to 12 noon, March 28, 1913; discharge, about 35,500 second-feet. Minimum stage from water-stage recorder, 2.25 feet, all day September 16, 1913; discharge, about 61 second-feet.

Ice.— Stage-discharge relation seriously affected by ice.

Accuracy.— Stage-discharge relation permanent; affected by ice during a large part of period from December to March, inclusive. Rating curve well defined between 150 and 20,000 second-feet. Operation of water-stage recorder satisfactory throughout the year. Daily discharge ascertained by applying to the rating table mean daily gage heights determined by inspecting gage height graph. Results excellent for periods when the stage-discharge relation is not affected by ice. Results fairly good for other periods.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of SACANDAGA RIVER AT HADLEY, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Aug. 6	J. W. Moulton	2.81	278
Dec. 11 *a*	J. W. Moulton	5.63	486
1918			
Jan. 4 *b*	J. W. Moulton	3.61	410
Jan. 29 *b*	E. D. Burchard	3.44	437
Mar. 1 *a*	J. W. Moulton	8.52	3,750
Mar. 9 *a*	J. W. Moulton	5.48	1,850
Mar. 21 *a*	J. W. Moulton	5.72	3,190
April 2	J. W. Moulton	7.82	10,200
April 25	J. W. Moulton	6.91	7,400
April 26	J. W. Moulton	6.74	6.630

a Partial ice cover or ice jam on control.
b Complete ice cover on control.

Daily discharge, in second-feet, of SACANDAGA RIVER AT HADLEY, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	4,100	323	455	218	7,430	420	420	420	3,800	8,700	4,580	1,800
2	3,660	307	499	250	7,130	440	420	440	3,800	10,400	4,580	1,620
3	3,060	361	622	268	6,140	460	420	440	2,800	12,600	4,460	1,330
4	2,430	366	573	278	5,080	480	400	420	2,200	13,500	4,460	1,100
5	1,880	312	486	334	4,100	460	380	440	1,800	11,500	4,340	956
6	1,450	273	412	608	3,250	440	340	420	1,600	9,710	4,100	947
7	1,220	250	366	730	2,600	460	300	420	1,700	8,700	3,660	1,040
8	1,040	232	350	668	2,110	460	260	420	1,800	8,050	3,350	1,780
9	882	227	328	552	1,660	440	240	420	1,800	8,700	2,960	1,740
10	821	312	302	506	1,520	460	240	380	1,900	9,370	2,780	1,560
11	838	630	278	474	1,380	440	260	360	2,000	9,710	2,960	1,760
12	956	526	263	443	1,240	550	300	400	1,600	8,700	2,870	1,950
13	1,120	424	254	594	1,130	550	320	600	1,500	7,430	3,060	2,780
14	1,140	361	227	1,150	1,020	550	320	800	1,700	6,410	4,700	2,870
15	1,040	339	236	1,080	956	600	340	800	1,900	5,730	5,860	2,600
16	986	350	227	1,290	901	600	400	1,000	2,000	5,730	6,000	2,110
17	910	443	214	1,480	882	600	380	1,300	1,600	6,270	5,470	1,650
18	847	526	205	1,230	847	600	420	1,600	1,700	6,980	4,700	1,340
19	847	486	197	1,110	795	550	440	2,000	2,000	7,740	3,880	1,100
20	830	401	184	1,160	778	550	480	2,400	2,400	7,740	3,250	919
21	770	339	184	1,650	730	550	500	2,600	3,200	7,430	2,780	787
22	690	307	189	1,530	750	550	440	2,600	4,400	7,280	2,430	821
23	615	273	189	1,270	750	550	400	2,600	5,730	7,430	2,110	1,090
24	559	455	189	1,170	750	550	400	2,400	6,980	7,430	1,860	1,200
25	532	608	180	1,480	750	500	400	2,400	7,740	6,980	1,600	1,140
26	539	545	176	2,110	650	480	440	2,800	7,740	6,550	1,520	976
27	499	480	172	2,110	600	480	460	3,400	7,430	5,860	1,600	821
28	455	412	172	1,950	550	480	440	3,800	7,740	5,210	1,770	714
29	395	378	172	2,600	500	480	440	......	7,430	4,790	1,720	622
30	366	372	184	4,440	440	460	420	......	7,740	4,580	1,650	559
31	344	424	......	6,550	......	440	420	......	7,740	......	2,030	......
Mean	1,150	388	283	1,330	1,910	504	382	1,360	3,720	7,900	3,330	1,390

NOTE.— Discharge, November 22 to March 22, inclusive, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of SACANDAGA RIVER AT HADLEY, for the year ended June 30, 1918

[Drainage area, 1,060 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	4,100	344	1,150	1.08	1.24
August	630	227	388	0.366	0.42
September	622	172	283	0.267	0.30
October	6,550	218	1,330	1.25	1.44
November	7,430	440	1,910	1.80	2.01
December	600	420	504	0.475	0.55
January	500	240	382	0.360	0.42
February	3,800	360	1,360	1.28	1.33
March	7,740	1,500	3,720	3.51	4.05
April	13,500	4,580	7,900	7.45	8.31
May	6,000	1,520	3,330	3.14	3.62
June	2,870	559	1,390	1.31	1.46
The year	13,500	172	1,970	1.86	25.15

HOOSIC RIVER

DESCRIPTION

Hoosic river has its sources on the west slope of the Hoosic mountains in Vermont and Massachusetts. Two head branches, one flowing southward, the other northward along the west slope of this range, unite at North Adams, Mass., and the stream then flows northwestward, entering the Hudson three miles north of Mechanicville. Above Buskirk the drainage basin is rugged and precipitous, the distribution of tributaries affording rapid concentration of the run-off from the steep rock slopes. The ridges are sparsely wooded. The soil in the valleys is generally firm and tenacious. The general elevation of the valley at the junction of the headwaters is 1,000 feet. Numerous dams, affording power for textile, agricultural implement and other industries, are scattered throughout the length of the stream from North Adams to Schaghticoke. The drainage basin contains no important lakes and but one storage reservoir, that at Farnum, near the head of the south branch.

HOOSIC RIVER AT HOOSICK FALLS

This station, established April 3, 1904, and maintained by this Department in coöperation with the United States Weather Bureau, is located on the Hoosic river above the dam at the factory of the Walter A. Wood Mowing and Reaping Machine Company, Hoosick Falls. The gage is a staff attached to the river end of the partition wall of the head-gate chamber on the left bank of the stream. Since July 14, 1908, the zero of the gage has been at the elevation of the crest of the dam, the gage reading from 0 to 5 feet above and below. Readings taken twice daily — at 7 A. M. and 5 P. M. — to tenths.

Due to the destruction of the dam, this station was abandoned February 21, 1918.

Daily gage height, in feet, of HOOSIC RIVER AT HOOSICK FALLS, for the year ended June 30, 1918. Sanford L. Cluett, Observer

DATE	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	0.0	0.0	0.2	0.0	0.55	0.05	0.0	0.0	......	......	......	......
2	0.0	0.0	0.2	0.0	0.4	0.0	0.0	0.0	......	......	......	......
3	0.1	0.0	0.1	0.0	0.25	0.0	0.0	0.0	......	......	......	......
4	0.1	0.0	0.1	0.0	0.2	0.0	0.0	0.0	......	......	......	......
5	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	......	......	......	......
6	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	......	......	......	......
7	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	......	......	......	......
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	......	......	......	......
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	......	......	......	......
10	0.0	0.0	0.0	0.0	0.05	0.0	0.0	0.0	......	......	......	......
11	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	......	......	......	......
12	0.0	0.0	0.0	0.0	0.05	0.0	0.0	0.0	......	......	......	......
13	0.1	0.0	0.0	0.0	0.05	0.0	0.0	0.2	......	......	......	......
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	......	......	......	......
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.85	......	......	......	......
16	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.85	......	......	......	......
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	......	......	......	......
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	......	......	......	......
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	......	......	......	......
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	......	......	......	......
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	......	......	......	......
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	......	......	......	......	......
23	0.0	0.0	0.0	0.0	0.1	0.0	0.0	......	......	......	......	......
24	0.0	0.0	0.0	0.0	0.1	0.0	0.0	......	......	......	......	......
25	0.0	0.0	0.0	0.0	0.0	*a*	0.0	......	......	......	......	......
26	0.0	0.0	0.0	0.2	0.0	0.0	0.0	......	......	......	......	......
27	0.0	0.0	0.0	0.1	0.0	0.0	0.0	......	......	......	......	......
28	0.0	0.0	0.0	0.1	0.0	0.0	0.0	......	......	......	......	......
29	0.0	0.0	0.0	0.2	0.0	0.0	0.0	......	......	......	......	......
30	0.0	0.05	0.0	0.45	0.0	0.0	0.0	......	......	......	......	......
31	0.0	0.2	......	1.55	......	0.0	0.0	......	......	......	......	......

NOTE.— Dam destroyed, station abandoned, Feb. 21.
a No record.

HOOSIC RIVER NEAR EAGLE BRIDGE

Location.— One-half mile below Walloomsac river and 1½ miles above Owl kill and Eagle Bridge, Rensselaer county.

Drainage area.— 512 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— August 13, 1910, to June 30, 1918. September 25, 1903, to December 31, 1908, at Buskirk, 4 miles below present station.

Gage.— Inclined staff on left bank near the farm house of James Russell, about 1½ miles above Eagle Bridge. Prior to August 17, 1914, chain gage, 400 feet above present site. Gage read by Mrs. Viola Davis, Mrs. Volney Russell and Mrs. J. E. Sherman.

Discharge measurements.— Made from cable half mile below gage or by wading.

Channel and control.— Gravel; somewhat shifting.

Extremes of discharge.— Current year: Maximum stage recorded during year, 12.8 feet at 5 P. M., February 15; discharge, about 11,300 second-feet. Minimum stage recorded, 2.68 feet at 6 A. M., September 24; discharge, about 44 second-feet.

1910–1918: Maximum stage not recorded, as gage used prior to August 17, 1914, could not be reached at high stages. Minimum stage recorded, 6.1 feet at 5 P. M., September 14, 1913; discharge, practically zero.

Ice.— Stage-discharge relation affected by ice.

Regulation.— Flow affected by storage on Walloomsac river and at Hoosick Falls about 2 miles above gage.

Accuracy.— Stage-discharge relation probably permanent between dates of shift. Shift occurred during the spring break-up. Stage-discharge relation affected by ice during a large portion of the period, December to February, inclusive. Rating curve used July 1 to February 20; well defined between 75 and 7,000 second-feet. Rating curve for remainder of year fairly well defined. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good except for periods of low water, when semidaily gage heights may not indicate the true mean, and during periods when the stage-discharge relation is affected by ice. Results fair for the latter periods.

States Geological Survey in coöperation with the State Engineer and Surveyor.

Discharge measurements of HOOSIC RIVER NEAR EAGLE BRIDGE, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
		Feet	*Sec.-ft.*
1917			
Dec. 28 *a*	J. W. Moulton	3.80	201
1918			
Jan. 7 *a*	E. D. Burchard	4.10	133
Jan. 28 *a*	J. W. Moulton	4.68	199
April 1	E. D. Burchard	6.19	2,830
April 1	E. D. Burchard	6.08	2,630
May 20	J. W. Moulton	4.54	1,040
May 20	J. W. Moulton	4.52	1,040
June 19	M. H. Carson and E. D. Burchard	3.14	288
June 19	M. H. Carson and E. D. Burchard	3.21	298
June 19	M. H. Carson and E. D. Burchard	3.21	294

a Measure made under complete ice cover.

Daily discharge, in second-feet, of HOOSIC RIVER NEAR EAGLE BRIDGE, for the year ended June 30, 1918

DATE	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	420	165	420	133	1,390	445	130	200	1,770	2,810	1,670	450
2	370	130	348	162	940	370	110	200	1,570	4,300	2,100	428
3	395	216	325	130	860	498	100	65	1,470	4,150	1,570	450
4	325	165	348	159	555	370	130	130	1,020	2,690	1,280	340
5	370	79	276	182	645	280	95	220	1,020	1,990	1,100	302
6	280	116	232	152	498	348	110	120	2,570	1,570	870	320
7	244	149	216	200	370	445	220	110	1,990	1,670	835	500
8	159	146	179	193	420	370	280	100	1,100	1,880	765	582
9	244	136	111	152	395	272	120	170	870	2,210	765	428
10	240	272	220	179	302	440	280	70	835	2,450	1,470	500
11	260	240	186	133	348	480	240	160	555	1,880	980	340
12	256	127	182	268	420	440	220	200	800	1,570	940	450
13	224	105	193	216	325	360	190	460	2,100	1,280	905	640
14	280	220	179	248	325	380	260	600	1,770	1,280	3,590	582
15	240	165	149	182	325	280	300	7,000	1,370	1,670	2,450	475
16	325	193	111	260	280	360	220	4,400	980	1,770	1,770	340
17	216	420	93	208	348	420	280	2,200	1,570	1,770	1,280	405
18	244	302	146	200	248	420	240	1,700	1,570	2,330	1,100	268
19	280	165	119	248	348	420	200	2,200	2,330	1,880	940	268
20	325	100	122	280	280	340	140	9,000	2,690	1,470	1,020	250
21	240	172	149	280	260	190	200	3,870	3,450	1,570	765	250
22	172	165	133	280	325	340	240	2,100	4,450	3,730	835	450
23	232	152	52	204	498	170	260	1,990	4,150	2,690	800	1,020
24	204	146	73	220	420	120	320	1,990	2,690	2,450	610	905
25	196	204	111	370	280	200	220	1,470	3,590	1,880	640	582
26	182	95	105	470	445	190	280	7,070	2,330	1,570	730	450
27	193	172	95	260	470	180	95	2,570	1,770	1,280	730	475
28	172	149	122	302	395	240	240	1,990	1,280	1,190	640	302
29	168	182	152	470	280	130	190	......	1,370	1,190	555	268
30	193	302	81	325	302	65	260	......	1,670	1,190	582	170
31	168	678	......	3,330	......	130	180	......	2,100	......	528	......
Mean	252	194	174	336	443	313	205	1,870	1,900	2,050	1,120	440

NOTE.— Discharge, December 10 to February 20, inclusive, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of HOOSIC RIVER NEAR EAGLE BRIDGE, for the year ended June 30, 1918

[Drainage area, 512 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	420	159	252	0.492	0.57
August	678	79	194	0.379	0.44
September	420	73	174	0.340	0.38
October	3,330	130	336	0.656	0.76
November	1,390	248	443	0.866	0.97
December	498	65	313	0.611	0.70
January	320	95	205	0.400	0.46
February	9,000	65	1,870	3.65	3.80
March	4,450	555	1,900	3.71	4.28
April	4,300	1,190	2,050	4.00	4.46
May	3,590	528	1,120	2.19	2.52
June	1,020	170	440	0.859	0.96
The year	9,000	65	765	1.49	20.30

HOOSIC RIVER AT SCHAGHTICOKE

Location.— At the dam of the Schaghticoke power-plant of the Schenectady Power Company located at the highway bridge at Schaghticoke on the Hoosic river about 6½ miles above its confluence with the Hudson river. The power-plant is about 1 mile below the dam and connected therewith by a canal and steel penstock.

Drainage area.— 635 square miles.

Records available.— December 1, 1908, to June 30, 1918.

Gage.— Indicating water-surface above dam, consists of a float operating contacts, which by voltage drop indicates in the power-house the water-surface. Gage in the forebay at end of canal is a staff gage graduated to tenths.

Control.— Discharge estimates based on the flow over the dam and the flow through the wheels estimated from hourly readings reduced by curves furnished by water-wheel manufacturers, based upon tests after installation. There are 4 radial inward flow Francis type wheels manufactured by Pelton, each 5,000 hp.

Extremes of discharge.— Current year: Maximum mean daily discharge recorded, 8,126 second-feet on October 31. Minimum mean daily discharge recorded, 0 second-feet on several days in September, October, December, January and February.

1908–1918: Maximum stage recorded, approximately 25,000 second-feet, February 6, 1909. Minimum stage recorded, 0 second-feet on a number of days, due to interruption of flow by plants farther upstream.

Regulation.— During low stages discharge appreciably affected by local storage at power-plants above station.

Coöperation.— Established and maintained by the Schenectady Power Company, discharge reduced and furnished by Mr. E. B. Doen, Superintendent, Schaghticoke, N. Y.

Daily discharge, in second-feet, of HOOSIC RIVER AT SCHAGHTICOKE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	331	202	358	82	1,000	690	0	72	1,800	2,362	1,729	531
2	446	123	290	104	682	323	0	67	1,390	3,642	1,652	321
3	544	231	254	81	726	435	0	159	1,119	3,579	1,500	377
4	230	113	140	115	490	252	0	0	717	3,369	1,344	300
5	315	100	102	162	612	252	0	86	992	2,646	1,063	333
6	309	112	197	277	640	215	0	0	2,432	2,327	1,095	245
7	209	123	55	104	369	194	0	99	1,462	1,509	984	606
8	203	177	88	173	346	61	0	143	1,120	2,030	842	642
9	188	135	127	142	448	0	0	7	793	2,443	813	262
10	138	270	115	70	342	30	0	12	1,020	2,310	996	454
11	188	217	90	132	452	121	104	128	628	2,012	1,600	360
12	268	121	45	136	475	0	174	50	911	2,002	610	701
13	250	129	15	247	384	80	150	270	1,280	1,709	1,026	623
14	300	196	34	0	211	91	174	628	2,377	1,684	2,158	568
15	312	215	26	200	208	127	178	3,724	1,370	1,980	3,000	419
16	240	376	127	255	233	34	42	1,096	1,290	1,505	2,008	264
17	184	364	0	178	305	0	67	443	1,100	1,685	2,014	418
18	349	276	75	140	148	208	68	216	1,750	2,862	1,230	277
19	1,021	184	254	210	263	231	60	2,863	1,760	1,855	1,343	204
20	707	223	58	308	200	81	0	7,780	2,200	1,450	2,109	128
21	405	140	196	266	245	150	73	3,199	2,445	1,577	1,194	288
22	137	166	290	202	401	163	103	1,712	3,550	3,288	941	858
23	328	173	23	170	403	162	80	1,650	3,764	2,845	864	842
24	318	115	46	156	480	138	68	1,375	2,472	2,745	680	752
25	240	203	58	410	242	173	79	1,910	3,084	2,275	831	500
26	174	131	81	314	200	67	99	2,070	2,764	1,837	633	434
27	284	186	193	247	206	147	197	2,333	1,681	1,516	836	366
28	90	159	81	370	180	111	34	1,500	1,389	1,491	719	224
29	226	184	92	450	184	86	57	......	1,220	1,545	683	238
30	183	692	150	1,406	259	0	111	......	1,680	1,221	618	231
31	172	637	......	8,126	......	0	95	......	2,182	......	542	.....
Mean *.	300	215	122	491	378	149	65	1,200	1,734	2,177	1,215	425

* Computed by State Engineer.

Monthly discharge of HOOSIC RIVER AT SCHAGHTICOKE, for the year ended June 30, 1918

[Drainage area, 635 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	1,020	90	300	0.472	0.54
August	692	100	215	0.339	0.39
September	358	0	122	0.192	0.21
October	8,126	0	491	0.773	0.89
November	1,000	148	378	0.595	0.66
December	690	0	149	0.235	0.27
January	197	0	65	0.102	0.12
February	7,780	0	1,200	1.89	1.97
March	3,764	628	1,734	2.73	3.15
April	3,642	1,221	2,177	3.43	3.83
May	3,000	542	1,215	1.91	2.21
June	858	128	425	0.669	0.75
The year	8,126	0	701	1,104	14.99

NOTE.— Minimum flow of 0 is due to operation of mills farther upstream.

GLENS FALLS FEEDER

Discharge measurements of GLENS FALLS FEEDER, for the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1918	*Near Feeder Dam* *	*Feet*	*Sec.-ft.*
Jan. 29	M. W. Grimes		0.9
Jan. 30	G. E. Deutschbein		5.13
Jan. 30	G. E. Deutschbein		5.76
Jan. 31	G. E. Deutschbein		4.30
Feb. 1	G. E. Deutschbein		2.98
Feb. 2	G. E. Deutschbein		1.60
	Near Gas House †		
Jan. 29	M. W. Grimes		7.99
Jan. 30	G. E. Deutschbein		8.77
Jan. 31	G. E. Deutschbein		9.42
Feb. 1	G. E. Deutschbein		9.08
Feb. 2	G. E. Deutschbein		4.15

* Owing to the very slow velocity and the fact that these measurements are under heavy ice cover, they should be considered as approximate only.

† These measurements made under partial ice cover. Most of the flow was in an open channel, about 12 feet wide and having fair velocity.

MOHAWK RIVER

DESCRIPTION

Mohawk river, the largest tributary of the Hudson, rises in the sandy hills south of Boonville, in central New York, about 40 miles from the east end of Lake Ontario. Its uppermost tributaries are fed by large springs. The river receives also considerable water brought in from the adjacent Black river drainage basin for the supply of Black River and Erie canals. The Mohawk flows southward until it reaches the city of Rome, at which point it turns toward the east, flowing across the state in a course nearly east until it enters the Hudson at Cohoes opposite North Troy. Its total length is about 140 miles and its drainage area comprises 3,486 square miles.

The immediate valley of the Mohawk is broad and open, at many places a mile or two in width, and the flats which border the stream have a rich alluvial soil, finely adapted to the raising of grass, grains and broom corn. Back of the flats there is a rise, usually gradual, but in certain localities more or less abrupt, to hills which attain altitudes several hundred feet above the stream. The more elevated lands are covered with sandy and gravelly loam. Toward the mouth of the river the valley becomes contracted and the meadows disappear.

Above Rome the Mohawk flows through a deep gorge in shale rock. From Rome eastward to Little Falls the valley is deeply filled with alluvial deposits and the flood plains on either side become submerged during freshets, thus acting to some extent as storage reservoirs. At Little Falls the river cuts through a rocky gorge, whose walls rise precipitously 500 or 600 feet.

The Erie canal ran parallel to the Mohawk through most of its course below Rome and derived a part of its water-supply from the river. Feeder dams for purposes of diversion for the supply of the Black River and old Erie canals were located on the river at Delta, Rome, Little Falls, Rocky Rift and Rexford. A dam at Oriskany creek also diverted into the canal a portion of the flow of that tributary, as well as waters brought into the Mohawk basin from storage reservoirs located in the upper drainage basin of Chenango river near Hamilton. There was also a largest tributary of the Mohawk.

The new Barge canal utilizes by canalization the greater portion of the river below Utica. The Barge canal leaves the north fork of the Mohawk river just above its junction with the Hudson river, where a low navigable surface at Elev. 15.2 is maintained by the Federal dam at Troy. The canal rises through five locks and reënters the river just above the new Crescent dam (dam No. 2), which is a curved concrete structure in two sections with an ogee crest totaling 1,486.2 feet at Elev. 184.0, final closure of which was made May 10, 1915, but by opening head-gates at the west end of the dam, the water-surface was kept below the crest until July 1, 1915, when gates were closed and first flow over the completed crest occurred. The head-gates were again opened from Oct. 11 to Dec. 4, 1915. This dam is about three-quarters of a mile above and is reached by the pool formed by the power dam of the Cohoes Company at Cohoes, the fixed crest of which was raised from an average elevation of 154.2 to about Elev. 157.0 in the summer of 1914. The pool formed by the Crescent dam extends about 10.2 miles upstream to the Vischer Ferry dam and submerges the old Dunsbach Ferry dam located about 4.6 miles upstream and which was partially removed during August, 1912.

The new Vischer Ferry dam (dam No. 3), final closure of which was made June 9, 1913, is a concrete structure with an ogee crest having a broken trace composed of three straight sections, of lengths, from south to north, of 735.2, 681.8 and 501.7, a total of 1,918.7 feet. The middle section is a low weir on an island cut down to Elev. 210.0 above the weir and somewhat lower below. This dam maintains a pool with a low navigable surface at crest elevation 211.0 about 10.9 miles in length and submerges the old State dam at Rexford about 4.3 miles upstream, which had a crest 675 feet long at Elev. 209.5.

Between Schenectady and St. Johnsville there are eight movable dams of the Boulé gate and bridge type. During the winter and during flood stages the gates and their supports are raised, leaving, except for either one or two piers, a channel entirely unobstructed and of an area practically equivalent to that existing at that point before the construction of the dam. The location of *i. e.* low water-surface to be maintained above dam during navigation season, and length of canalized pool above are as follows:

Scotia dam (No. 4) about three miles above the N. Y. C. R. R. bridge at Schenectady, openings 150–210–150 feet, sill Elev. 209.0, pool Elev. 225.0, 5 miles long.

Rotterdam dam (No. 5) about one and nine-tenths miles above the Boston & Maine bridge at Rotterdam Junction, openings 150–210–150 feet, sill Elev. 220.0, pool Elev. 240.0, 6 miles long.

Cranesville dam (No. 6) three and two-tenths miles below the Amsterdam–South Amsterdam highway bridge, openings 150–180–150 feet, sill Elev. 235.0, pool Elev. 255.0, 4.3 miles long.

Amsterdam dam (No. 7) one and one-tenth miles above the Amsterdam–South Amsterdam highway bridge, openings 180–210–180 feet, sill Elev. 247.0, pool Elev. 267.0, 4.3 miles long.

Tribes Hill dam (No. 8) just above the Tribes Hill–Fort Hunter highway bridge and just below the mouth of Schoharie creek, openings 240–240 feet, sill Elev. 262.0, pool Elev. 278.0, 9.6 miles long.

Yosts dam (No. 9) nine-tenths of a mile below the village of Yosts, openings 180–180 feet, sill Elev. 268.0, pool Elev. 286.0, 7.8 miles long.

Canajoharie dam (No. 10) about one-third mile above the Canajoharie–Palatine Bridge highway bridge, openings 210–210 feet, sill Elev. 276.0, pool Elev. 294.0, 3.4 miles long.

Fort Plain dam (No. 11) four-tenths of a mile above Fort Plain–Nelliston highway bridge, openings 210–210 feet, sill Elev. 284.0, pool Elev. 302.0, 6.6 miles long.

Although the above movable dams had been previously completed and operated to facilitate dredging operations, this portion of the canal was not opened to navigation until May, 1916.

From below new Barge canal lock No. 16, about one and four-tenths miles above St. Johnsville, to above the old Rocky Rift feeder dam the canal follows a land-line. Opposite lock No. 16, at the end of the river dredging, the natural bed of the stream is maintained by the Mindenville retention dam. the crest of which is 300 feet long and at Elev. 300.5, a foot and a half below

Rocky Rift feeder dam (No. 12) has been raised from the old fixed crest averaging about Elev. 319.35 to Elev. 322.5, by the addition of a movable crest, consisting of steel trestles and small Boulé gates with a new fixed crest, at Elev. 319.5. The canalized pool above this dam extends to about 3,000 feet below the lower dam at Little Falls, a distance of about 3.7 miles. Castle creek enters the land-line of the Barge canal just above, or west of the Indian Castle guard-gate and flows west through the canal, entering the Mohawk river above the Rocky Rift dam.

The three existing dams at Little Falls are unchanged, the upper, or State dam (No. 13) being used to maintain the canalized river pool at Elev. 363.0 and 3.2 miles in length to Jacksonburg, where the canal enters a land-line.

The canal reënters the river just above the Mohawk street bridge at Herkimer. Immediately below this bridge a new dam (No. 14) has been constructed to retain the canalized pool to the Frankfort retention dam, a distance of 4.6 miles, and that of the land-line from Frankfort to lock No. 19 at Sterling creek at a low navigable surface of Elev. 383.0. The Herkimer dam, a needle dam 126 feet long with a sill at Elev. 374.0, except for 10.5 feet, which is at Elev. 379.0, will be superseded by a new dam, just below, of the Boulé gate and bridge type, of the same span, now under construction.

Above Frankfort several bends in the river have been cut out to provide room for the land-line to Rome, and the existing bed of the stream is retained by the Frankfort retention dam, located just above the canal terminal spur at Frankfort and about 1,600 feet upstream from the highway bridge over the river on the Dyke road between Frankfort and North Frankfort. This dam is of concrete with an ogee crest, having a broken profile as follows: 41 feet 6 inches at Elev. 381.0, flanked by two sections each 36 feet 9 inches long, at Elev. 386.0. For the passage of flood flows there is a paved crest at Elev. 389.0, 433 feet long at the north end of the concrete structure. At Rome the Mohawk river enters the summit level of the Barge canal over a new retention dam, about 400 feet north of the canal, having a concrete ogee crest 225 feet long at Elev. 427.0, and is diverted eastward along the canal prism for 3.2 miles, leaving it over a concrete spillway with an ogee crest 225 feet long at pool Elev. 420.0. There is also another and smaller spillway with paved crest 88 feet in length at Elev. 420, about three-quarters of a mile east of where the river enters the canal. The section of the summit level utilized for the river can be cut off from the remaining portions during higher flow periods by the closure of guard-gates at each end.

The water-supply for the Rome summit level of the new canal will to a large extent come from the Mohawk. A high dam has been constructed across the Mohawk at Delta, 6 miles north of Rome, for the purpose of creating a reservoir to store water for the canal. The capacity is 2,750,000,000 cubic feet. This supply will be supplemented by a reservoir of 3,445,000,000 cubic feet capacity on West Canada creek at Hinckley. Hinckley water will be passed down West Canada creek and diverted by a new dam on the site of the old Morgan dam at Trenton Falls through a feeder canal to Nine-Mile creek and thence to the Barge canal.

The principal tributaries of the Mohawk below the source are, successively, Oriskany, West Canada, East Canada and Schoharie creeks.

Drainage areas of MOHAWK RIVER AND TRIBUTARIES
(From U. S. G. S. topographic maps)

LIMITS	AREA IN SQUARE MILES			
	Place to place	Sub-total	Branch total	Total
Lansingkill				
Source to junction with West branch	29.41	....	29.41	....
MOHAWK RIVER				
Source of West branch to junction with East branch	19.25	19.25	....	....
Source of East branch to junction with West branch	15.16	34.41	....	....
Junction of East and West branches to and including first large creek to north	5.86	40.27	....	....
First creek below junction to and including second large creek to north	6.08	46.35	....	....
Second creek below junction to junction of Lansingkill, Hillside	3.40	49.75	49.75	79.16
Junction at Hillside to mouth of Stringer brook	1.17	....	....	80.3
Stringer Brook				
Source to mouth	13.43	....	13.43	93.76
MOHAWK RIVER				
Junction of Stringer brook to mouth of Big brook (Frenchville)	3.02	....	....	96.78

Drainage areas of MOHAWK RIVER AND TRIBUTARIES — *Continued*
(From U. S. G. S. topographic maps)

LIMITS	AREA IN SQUARE MILES			
	Place to place	Sub-total	Branch total	Total
Big Brook				
Source to mouth	22.86	....	22.86	119.64
MOHAWK RIVER				
Junction of Big brook (Frenchville) to State feeder dam at Delta (now submerged)	16.25	....	....	135.89
State feeder dam at Delta to highway bridge below new Delta dam	11.97	....	....	147.86
Highway bridge below new Delta dam to Ridge Mills dam	7.74	....	....	155.60
Ridge Mills dam to Floyd Ave. bridge	2.59	....	....	158.19
Floyd Ave. bridge to State dam at Rome	2.55	....	....	160.74
State dam at Rome to mouth of Six-Mile creek	26.40	....	....	187.14
Six-Mile Creek (Oneida Co.)				
Source to mouth	14.94	....	14.94	202.08
MOHAWK RIVER				
Mouth of Six-Mile creek to mouth of Nine-Mile creek	5.29	....	....	207.37
Nine-Mile Creek				
Source to South Trenton	19.62	....	....	....
South Trenton to crossing of 700-foot contour	6.54	26.16	....	....
Crossing of 700-foot contour to first bridge above Holland Patent	2.49	28.65	....	....
First bridge above Holland Patent to first bridge below Holland Patent	12.71	41.36	....	....
First bridge below Holland Patent to Stittville	6.12	47.48	....	....
Stittville to first bridge below Stittville (Powell's bridge)	11.59	59.07	....	....
Powell's bridge to third bridge below Stittville	10.34	69.41	....	....
Third bridge below Stittville to mouth	0.79	70.20	70.20	277.57
MOHAWK RIVER				
Mouth of Nine-Mile creek to mouth of Oriskany creek	6.19	....	....	283.76
Areas diverted from Chenango river basin *				
Chenango river from source to junction with Eaton brook at Eaton	25.25	....	....	25.25
Eaton brook from source to Eaton reservoir dam	9.16	9.16	....	....
Eaton reservoir dam to junction with Chenango river at Eaton	6.69	15.85	15.85	41.10
Chenango river, junction Eaton brook to head of feeder canal	2.99	....	....	44.09
Bradley brook from source to Bradley reservoir dam	3.04	....	....	....
Bradley reservoir dam to head of feeder canal	4.57	7.61	....	....
Kingsley brook from source to Kingsley reservoir dam	5.12	....	....	....
Kingsley reservoir dam to junction with Bradley brook feeder canal	1.75	6.87	14.48	58.57
Header of feeder, Chenango river to junction of feeders, Woodman pond	2.04	....	....	60.61
Payne brook from source to Madison reservoir dam	8.73	....	....	....
Madison reservoir dam to junction of feeders, Woodman pond	2.04	10.77	10.77	71.38
Junction of feeders, Woodman pond to junction with Leland pond outlet	3.26	....	....	74.64
Source, Leland creek to canal reservoir dam	6.74	....	....	81.38
Junction with Leland pond outlet to natural watershed limits	6.53	....	....	87.91

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* Not included in totals for Mohawk river areas.

Drainage areas of MOHAWK RIVER AND TRIBUTARIES — *Continued*

(From U. S. G. S. topographic maps)

LIMITS	AREA IN SQUARE MILES			
	Place to place	Sub-total	Branch total	Total
Oriskany Creek				
Source of Oriskany creek to bridge at Solsville	7.84	....	....	....
Solsville to Oriskany Mills	13.27	21.11	....	....
Oriskany Mills to junction with Big creek, Oneida county (Deansboro)	16.54	37.65	....	....
Source of Big creek to junction with Oriskany creek (Deansboro)	20.32	57.97	....	....
Junction with Big creek to Farmers Mills	14.09	72.06	....	....
Farmers Mills to Clinton	11.11	83.17	....	....
Clinton to Kirkland	4.73	87.90	....	....
Kirkland to dam above Clark Mills	5.76	93.66	....	....
Dam above Clark Mills to Walesville	9.92	103.58	....	....
Walesville to Colemans	36.99	140.57	....	....
Colemans to State dam above Oriskany	5.47	146.04	....	....
State dam above Oriskany to mouth of Oriskany creek	0.78	146.82	146.82	430.58
MOHAWK RIVER				
Mouth of Oriskany creek to mouth of Sauquoit creek	15.68	....	....	446.26
Sauquoit Creek				
Source of Sauquoit creek to Cassville	7.17	....	....	....
Cassville to dam at Clayville	4.71	11.88	....	....
Dam at Clayville to dam at Sauquoit	12.54	24.42	....	....
Dam at Sauquoit to dam above Chadwick	4.28	28.70	....	....
Dam above Chadwick to 700-foot contour at Willowvale	3.72	32.42	....	....
700-foot contour at Willowvale to dam at Washington Mills	11.37	43.79	....	....
Dam at Washington Mills to dam above New Hartford	2.92	46.71	....	....
Dam above New Hartford to dam at Capron	1.52	48.23	....	....
Dam at Capron to dam below Capron	2.20	50.43	....	....
Dam below Capron to upper dam at New York Mills	0.49	50.92	....	....
Upper dam at New York Mills to mouth of Sauquoit creek	14.58	65.50	65.50	511.76
MOHAWK RIVER				
Mouth of Sauquoit creek to Black River R. R. bridge at Utica	13.09	....	....	524.85
Black River R. R. bridge at Utica to mouth of Reels creek	2.70	....	....	527.55
Reels Creek				
Source to mouth	9.69	....	9.69	537.24
Ballou Creek				
Source to mouth	4.57	....	4.57	541.81
MOHAWK RIVER				
Mouth of Ballou creek to mouth of Starch Factory creek	1.99	....	....	543.80
Starch Factory Creek				
Source to mouth	7.22	....	....	551.02
MOHAWK RIVER				
Mouth of Starch Factory creek to mouth of Sterling creek	30.93	....	....	581 95
Sterling Creek				
Source to mouth	19.94	....	....	601.89
MOHAWK RIVER				
Mouth of Sterling creek to mouth of Moyer creek	14.85	....	....	616.74

Drainage areas of MOHAWK RIVER AND TRIBUTARIES — *Continued*
(From U. S. G. S. topographic maps)

LIMITS	AREA IN SQUARE MILES			
	Place to place	Sub-total	Branch total	Total
Moyer Creek				
Source to mouth	21.66	....	....	638.40
MOHAWK RIVER				
Mouth of Moyer creek to mouth of Steels creek	7.30	....	....	645.70
Steels Creek				
Source to mouth	29.54	....	....	675.24
MOHAWK RIVER				
Mouth of Steels creek to Mohawk-Herkimer road bridge	33.07	....	....	708.31
Mohawk-Herkimer road bridge to mouth of West Canada creek	7.51	....	....	715.82
West Canada Creek *				
Source to mouth	583.64	....	....	1,299.46
MOHAWK RIVER				
Mouth of West Canada creek to State dam at Little Falls	26.07	....	....	1,325.53
State dam at Little Falls to Gilberts dam	4.20	....	....	1,329.73
Gilberts dam to Rocky Rift feeder dam	11.82	....	....	1,341.55
Crum Creek				
Source to mouth	11.40	....	....	1,352.95
MOHAWK RIVER				
Mouth of Crum creek (feeder dam) to mouth of Nowadaga creek	0.27	....	....	1,353.22
Nowadaga Creek				
Source to mouth	32.43	....	....	1,385.65
MOHAWK RIVER				
Mouth of Nowadaga creek to mouth of East Canada creek	4.65	....	....	1,390.30
East Canada Creek *				
Source to mouth	*a* 281.81	....	....	*a* 1,672.11
MOHAWK RIVER				
Mouth of East Canada creek to mouth of East Crum creek	0.59	....	....	*a* 1,672.70
East Crum Creek				
Source to mouth	15.55	....	....	*a* 1,688.25
Mohawk River				
Mouth of East Crum creek to mouth of Timmerman creek	3.31	....	....	*a* 1,691.56
Timmerman Creek				
Source to mouth	16.38	....	....	*a* 1,707.94
MOHAWK RIVER				
Mouth of Timmerman creek to mouth of Zimmerman creek	0.52	....	....	*a* 1,708.46
Zimmerman Creek				
Source to mouth	14.63	....	....	*a* 1,723.09
MOHAWK RIVER				
Mouth of Zimmerman creek to St. Johnsville bridge	0.54	....	....	*a* 1,723.63
St. Johnsville bridge to mouth of Garoga creek	12.05	....	....	*a* 1,735.68

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* For subareas, see separate table following. *a* Corrected for error of 0.2 noted in Report of State Engineer and Surveyor for 1916, Vol. II, pages 322 and 325.

(From U. S. G. S. topographic maps)

LIMITS	AREA IN SQUARE MILES			
	Place to place	Sub-total	Branch total	Total
Garoga Creek				
Source of Garoga creek to foot of East Garoga lake	10.44	....	....	....
Foot of East Garoga lake to foot of pond, Newkirk Mills	3.18	13.62	....	....
Foot of pond, Newkirk Mills, to junction with Peck lake outlet	9.11	22.73	22.73	....
Source to Woodworth lake to foot of Peck lake	16.29	....	....	....
Foot of Peck lake to junction with Garoga creek	4.52	20.81	43.54	....
Junction with Peck lake outlet to Rockwood	7.20	....	50.74	....
Rockwood to Garoga	2.19	....	52.93	....
Garoga to mouth of Sprite creek	4.99	....	57.92	....
Source of Sprite creek to mouth	14.13	....	72.05	....
Mouth of Sprite creek to fourth highway bridge above mouth	13.19	....	85.24	....
Fourth highway bridge above mouth to second highway bridge above mouth	7.78	....	93.02	....
Second highway bridge above mouth to first highway bridge above mouth	1.17	....	94.19	....
First highway bridge above mouth to mouth of Garoga creek	0.51	....	94.70	*a* 1,830.38
MOHAWK RIVER				
Mouth of Garoga creek to Fort Plain	12.70	....	....	*a* 1,843.08
Fort Plain to Canajoharie	67.92	....	....	*a* 1,911.00
Canajoharie Creek				
Source to mouth	69.22	....	69.22	*a* 1,980.22
MOHAWK RIVER				
Canajoharie to Sprakers	9.94	....	....	*a* 1,990.16
Flat Creek				
Source to mouth	49.11	....	49.11	*a* 2,039.27
MOHAWK RIVER				
Sprakers to mouth of Yatesville creek	17.56	....	....	*a* 2,056.83
Yatesville Creek				
Source to mouth	12.71	....	12.71	*a* 2,069.54
MOHAWK RIVER				
Mouth of Yatesville creek to mouth of Cayadutta creek	24.48	....	....	*a* 2,094.02
Cayadutta Creek				
Source of Cayadutta creek to Johnstown (Main street bridge)	35.16	....	....	....
Johnstown (Main street bridge) to dam above Sammonsville	2.84	38.00	....	....
Dam above Sammonsville to dam at Sammonsville	3.53	41.53	....	....
Dam at Sammonsville to dam two miles below Sammonsville	16.44	57.97	....	....
Dam below Sammonsville to mouth of Cayadutta creek	5.06	63.03	63.03	*a* 2,157.05
MOHAWK RIVER				
Mouth of Cayadutta creek to Fultonville bridge	0.68	....	....	*a* 2,157.73
Fultonville bridge to mouth of Schoharie creek	47.39	....	....	*a* 2,205.12
Schoharie Creek *				
Source to mouth	*b* 929.88	....	....	*b* 3,135.00

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* For subareas, see table following. *a* Corrected for error of 0.2 noted in Report of State Engineer and Surveyor for 1916, Vol. II, pages 322 and 325. *b* These areas have been revised as the result of a joint determination of drainage areas of Schoharie creek, based on independent computations by the engineers of the Board of Water Supply of the city of New York and of the Department of State Engineer, and are also corrected for the error of 0.2 noted in Report of State Engineer and Surveyor for 1916, Vol. II, pages 322 and 325.

LIMITS	AREA IN SQU		
	Place to place	Sub-total	
MOHAWK RIVER			
Mouth of Schoharie creek to mouth of Chuctanunda creek (Amsterdam)	31.54	....	.
South Chuctanunda Creek			
Source to Minaville	22.62	22.62	.
Minaville to mouth	10.41	33.03	
North Chuctanunda Creek			
Source to dam, Amsterdam reservoir	8.76	8.76	.
Dam, Amsterdam reservoir to Hagaman	20.77	29.53	.
Hagaman to Rockton	4.11	33.64	..
Rockton to mouth	5.58	39.22	
MOHAWK RIVER			
Amsterdam to Hoffman Ferry	43.59	....	..
Hoffman Ferry to Scotia bridge	52.44	....	..
Scotia bridge to mouth of Alplaus kill	24.37	....	..
Alplaus Kill			
Source to mouth	55.80	....	
MOHAWK RIVER			
Mouth of Alplaus kill to Vischer Ferry dam	12.21	....	...
Vischer Ferry dam to Crescent dam	63.13	....	...
Crescent dam to Cohoes Co.'s dam	0.61	....	...
Cohoes Co.'s dam to mouth of Mohawk river	12.68	....	...

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b These areas have been revised as the result of a joint determination of drai
harie creek, based on independent computations by the engineers of the Boar
of the city of New York and of the Department of State Engineer, and are al
error of 0.2 noted in Report of State Engineer and Surveyor for 1916, Vol. II,

Drainage areas of WEST CANADA CREEK

(From U. S. G. S. topographic maps)

LIMITS	AREA IN SQUARE		
	Place to place	Sub-total	Bra tot
WEST CANADA CREEK			
Source to outlet of Mud lake	18.05	....	.....
Outlet of Mud lake to Swanson dam	28.77	....	.....
Swanson dam to Honnedaga brook	46.82	....	.....
Honnedaga Brook			
Honnedaga lake above outlet	5.40	....	.....
Lake to mouth	11.90	....	17.
WEST CANADA CREEK			
Honnedaga brook to South branch	30.46	....	......
South Branch, West Canada Creek			
Source to Mountain House	34.40	....	......
Mountain House to mouth	19.25	....	53.

Drainage areas of WEST CANADA CREEK — *Continued*

(From U. S. G. S. topographic maps)

LIMITS	AREA IN SQUARE MILES			
	Place to place	Sub-total	Branch total	Total
WEST CANADA CREEK				
South branch to Four-Mile brook (Wilmurt bridge)	2.58	....	....	197.63
Four-Mile Brook				
Source to mouth	....	....	26.17	223.80
WEST CANADA CREEK				
Four-Mile brook to Black creek	36.92	....	....	260.72
Black Creek				
Source through Hall Vly	8.40	....	....	....
Hall Vly to Bennett's mill (first bridge above Gray)	16.30	....	24.70	....
Bennett's mill to Gray	4.50	....	29.20	....
Gray to North branch (first bridge below Gray)	3.00	....	32.20	....
North Branch, Black Creek				
Source to Bull Hill road (contour 1,520)	6.80	....	....	....
Bull Hill road to Mill creek	4.00	10.80	....	....
Mill creek:				
Source through Cranberry lake and swamp	11.00	....	....	....
Foot of Cranberry swamp to mouth	6.20	17.20	....	....
Total, North branch, Black creek, to Mill creek, inclusive		28.00		
North Branch, Black Creek				
Mill creek to mouth	0.85	28.85	61.05	....
Black Creek				
North branch to Mounts creek	0.17	....	61.22	....
Mounts Creek				
Source to Gray-Wilmurt road (Radley)	13.25	....	....	....
Gray-Wilmurt road to mouth	2.10	15.35	76.57	....
Black Creek				
Mounts creek to second bridge below Gray	1.55	....	78.12	....
Second bridge to third bridge below Gray	5.65	....	83.77	....
Third bridge to fourth bridge below Gray	12.35	....	96.12	....
Fourth bridge to Pardeville bridge	4.00	....	100.12	....
Pardeville bridge to Grant *c*	1.95	....	102.07	....
Grant to West Canada creek *c*	1.15	....	103.22	363.94
WEST CANADA CREEK				
Black creek to Twin Rock bridge *c*	0.50	....	....	364.44
Twin Rock bridge to Hinckley dam *c*	8.50	....	....	372.94
Hinckley dam to Prospect	2.00	....	....	374.94
Prospect to Trenton Falls	0.90	....	....	375.84
Trenton Falls to Steuben creek	6.20	....	....	382.04
Steuben Creek				
Source to mouth	....	....	52.30	434.34
WEST CANADA CREEK				
Steuben creek to Poland (first bridge below)	35.80	....	....	470.14
Poland to Newport	10.00	....	....	480.14
Newport to Middleville	47.20	....	....	527.34
Middleville to Kast bridge	47.50	....	....	574.84
Kast bridge to mouth	8.80	....	....	583.64

c Creek drowned out by reservoir.

Drainage areas of EAST CANADA CREEK
(From U. S. G. S. topographic maps)

LIMITS	AREA IN SQUARE MILES			
	Place to place	Sub-total	Branch total	Total
EAST CANADA CREEK				
Above Oregon	40.13	....	....	40.13
Oregon to junction with North creek	10.42	....	....	50.55
North Creek				
Source to junction with East Canada creek	18.60	....	18.60	69.15
EAST CANADA CREEK				
Junction with North creek to junction with Trammel creek	8.63	....	....	77.78
Trammel Creek				
Source to junction with East Canada creek	12.04	....	....	89.82
EAST CANADA CREEK				
Junction with Trammel creek to junction with Ayers creek (Stratford)	0.20	....	....	90.02
Ayers Creek				
Source to junction with East Canada creek	13.63	....	....	103.65
EAST CANADA CREEK				
Junction with Ayers creek (Stratford) to Emmonsburg	8.05	....	....	111.70
Emmonsburg to junction with Big Sprite creek	15.68	....	....	127.38
Big Sprite Creek				
Source to Stewart landing	40.90	....	....	....
Stewart landing to junction with East Canada creek	7.87	....	48.77	176.15
EAST CANADA CREEK				
Junction with Big Sprite creek to junction with Middle Sprite creek	3.70	....	....	179.85
Middle Sprite Creek				
Source to junction with East Canada creek	22.65	....	....	202.50
EAST CANADA CREEK				
Junction with Middle Sprite creek to junction with Spruce creek	0.20	....	....	202.70
Spruce Creek				
Source to dam at Diamond Hill	36.20	36.20	....	*a* 253.18
Dam at Diamond Hill to Salisbury	13.08	49.28	....	....
Salisbury to junction with East Canada creek	1.20	....	50.48	....
EAST CANADA CREEK				
Junction with Spruce creek to lower bridge, Dolgeville	0.60	....	....	*a* 253.78
Lower bridge, Dolgeville, to High falls	3.64	....	....	*a* 257.42
High falls to junction with Gillett creek	0.84	....	....	*a* 258.26
Gillett Creek				
Source to junction with East Canada creek	10.92	....	....	*a* 269.18
EAST CANADA CREEK				
Junction with Gillett creek to Ingham Mills	8.73	....	....	*a* 277.91
Ingham Mills to Beardslee Falls	3.60	....	....	*a* 281.51
Beardslee Falls to mouth	0.30	....	....	*a* 281.81

a Corrected for error of 0.2 noted in Report of State Engineer and Surveyor for 1916, Vol. II, pages 322 and 325.

LIMITS	Area in Square Miles	
	Place to place	Total
Source to Pratt Rocks, about 1¼ miles above Prattsville highway bridge	225.89	225.89
Pratt Rocks to Prattsville gage at highway bridge, Prattsville	10.23	236.12
Prattsville gage to Devasego Falls, at falls	6.84	242.96
Devasego Falls to Gilboa, at power dam	70.75	313.71
Gilboa to North Blenheim, at old dam	88.85	402.56
North Blenheim to Middleburg, at highway bridge	129.01	531.57
Middleburg to Schoharie Junction, at D. & H. R. R. bridge	284.13	815.70
Schoharie Junction to Sloansville, at highway bridge	16.35	832.05
Sloansville to Esperance, at highway bridge	43.77	875.82
Esperance to Burtonville, at power dam, about ½ mile above highway bridge	10.87	886.69
Burtonville to Florida, just below fordway	19.43	906.12
Florida to Wellsville, about ¾ mile above highway bridge	7.95	914.07
Wellsville to Mill Point, about ½ mile below highway bridge	6.36	920.43
Mill Point to Fort Hunter, at Fort Hunter feeder dam	9.45	929.88

* This table is the result of a joint determination of drainage areas of Schoharie creek, based on independent computations by the engineers of the Board of Water Supply of the city of New York and of the Department of State Engineer.

DELTA RESERVOIR

This station, established April, 1913, is located at the dam of the Delta reservoir on the Mohawk river. The gage is a concrete staff on the substructure of the gate-house. This station indicates the surface of the Delta reservoir, constructed in connection with the Barge canal work to supply the Rome summit level. It is read twice daily — at 9 A. M. and 4 P. M. — to tenths. The dam is a concrete structure with an ogee crest 300 feet long at elevation 550.0. There are four 60-inch pipes to pass water downstream and a 30-inch pipe line to supply water to the Black River canal. The reservoir at crest level has an area of about 4⅓ square miles and a capacity of 2,750,000,000 cubic feet.

Daily elevation of water-surface (B. C. datum) of DELTA RESERVOIR AT DELTA DAM, for the year June 30, 1918. William Masner, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	550.65	549.5	550.25	544.8	549.0	540.2	535.0	530.35	537.55	547.25	541.9	542.85
2.....	550.5	549.5	550.5	544.75	548.9	539.95	534.85	530.15	537.8	548.4	542.2	542.7
3.....	550.4	549.35	550.45	544.55	548.75	539.65	534.65	530.0	537.9	549.0	542.2	542.55
4.....	550.4	549.25	550.3	544.6	548.55	539.2	534.45	529.75	537.9	548.8	542.2	542.45
5.....	550.3	549.1	550.2	545.0	548.35	538.7	534.2	529.65	538.05	548.25	542.2	542.25
6.....	550.2	549.0	550.15	545.45	548.15	538.25	534.1	529.45	538.1	547.7	542.1	542.05
7.....	550.4	548.9	550.05	545.5	547.85	537.95	534.05	529.25	538.25	547.1	542.0	542.15
8.....	550.3	548.8	550.0	545.6	547.65	537.8	533.9	529.05	538.3	546.65	541.9	542.3
9.....	550.2	549.25	549.85	545.7	547.35	537.7	533.75	528.85	538.3	547.05	541.85	542.25
10.....	550.2	549.7	549.75	545.85	547.0	537.6	533.55	528.65	538.15	546.7	541.8	542.2
11.....	550.4	549.7	549.55	545.9	546.7	537.45	533.35	528.45	537.95	546.15	541.9	542.1
12.....	550.55	549.55	549.35	545.85	546.45	537.3	533.25	528.25	537.6	545.4	541.9	542.15
13.....	550.5	549.5	549.2	546.6	546.25	537.15	533.15	528.05	537.25	544.75	542.05	542.3
14.....	550.5	549.5	548.95	546.6	545.8	537.0	533.0	528.0	537.4	544.2	542.7	542.4
15.....	550.45	549.4	548.75	546.7	545.4	537.0	532.95	528.25	537.35	543.7	542.8	542.35
16.....	550.6	549.3	548.5	547.1	545.05	536.95	532.9	528.55	537.15	543.05	542.8	542.25
17.....	550.5	549.25	548.2	546.95	544.85	536.75	532.75	528.9	537.0	542.25	542.7	542.15
18.....	550.4	549.15	547.95	546.7	544.45	536.65	532.55	529.0	537.25	542.1	542.6	541.9
19.....	550.35	549.05	547.75	546.45	544.15	536.5	532.35	529.15	537.75	541.95	542.55	541.75
20.....	550.3	548.95	547.45	547.05	543.8	536.4	532.2	530.5	538.55	541.9	542.4	541.65
21.....	550.25	548.85	547.25	547.15	543.45	536.25	532.1	532.2	540.0	541.9	542.65	541.55
22.....	550.2	548.75	546.95	546.9	543.2	536.1	532.0	533.2	541.85	542.4	542.8	541.5
23.....	550.1	548.7	546.7	546.75	543.2	536.05	531.85	533.9	543.75	542.7	543.0	541.45
24.....	550.05	550.8	546.35	546.55	542.95	536.0	531.6	534.25	544.7	542.7	543.0	541.35
25.....	550.0	550.95	546.2	546.85	542.6	535.9	531.45	534.55	545.6	542.6	543.0	541.25
26.....	550.0	550.65	545.85	547.2	542.2	535.85	531.35	535.2	546.45	542.5	543.1	541.05
27.....	549.9	550.45	545.6	547.05	541.85	535.75	531.15	536.25	546.6	542.35	543.15	540.9
28.....	549.8	550.3	545.25	547.0	541.65	535.65	531.05	537.1	546.15	542.15	543.3	540.75
29.....	549.7	550.3	545.05	547.05	541.0	535.35	530.95	......	545.65	541.95	543.25	540.6
30.....	549.65	550.3	544.85	547.7	540.45	535.2	530.65	......	545.9	541.9	543.15	540.5
31.....	549.6	550.2	......	548.95	......	535.1	530.5	......	546.6	......	543.0	......

MOHAWK RIVER ABOVE DAM, RIDGE MILLS

This station, established May 3, 1904, is located above the dam across the Mohawk river at Ridge Mills, about 2¼ miles upstream from Rome. The gage is a staff attached to the timber the crest. The gage is read once daily — at about 7 A. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER ABOVE DAM AT RIDGE MILLS, for the year ended June 30, 1918. Daniel Brown, Observer

DAY	July	Aug.	Sept.	DAY	July	Aug.	Sept.
1	466.6	466.1	466.1	16	466.6	466.0	466.4
2	466.5	466.1	466.5	17	466.5	466.0	466.4
3	466.2	466.1	466.3	18	466.4	466.0	466.4
4	466.3	466.1	466.2	19	466.3	466.0	466.4
5	466.2	466.1	466.1	20	466.2	466.0	466.4
6	466.1	466.1	466.1	21	466.1	466.0	466.4
7	466.4	466.1	466.1	22	466.1	466.0	466.4
8	466.2	466.1	466.1	23	466.1	466.0	466.4
9	466.2	466.2	466.2	24	466.1	466.7	466.4
10	466.2	466.1	466.2	25	466.1	466.2	466.4
11	466.2	466.1	466.2	26	466.1	466.7	466.2
12	466.6	466.0	466.2	27	466.1	466.5	466.2
13	466.6	466.0	466.2	28	466.1	466.2	466.2
14	466.4	466.0	466.3	29	466.1	466.2	466.2
15	466.2	466.0	466.4	30	466.1	466.2	[a]
				31	466.1	466.1	......

[a] No record. Station discontinued September 29, 1917.

MOHAWK RIVER BELOW DAM, RIDGE MILLS

This station, established May 3, 1904, is located below the dam across the Mohawk river at Ridge Mills, about 2¼ miles above Rome. The gage is a staff located on the lower end of the timber cribbing below the dam and is read once daily — at about 7 A. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER BELOW DAM AT RIDGE MILLS, for the year ended June 30, 1918. Daniel Brown, Observer

DAY	July	Aug.	Sept.	DAY	July	Aug.	Sept.
1	460.0	459.5	459.6	16	460.0	459.5	459.9
2	459.8	459.5	459.9	17	459.8	459.5	459.9
3	459.4	459.5	459.9	18	459.7	459.5	459.9
4	459.6	459.5	459.9	19	459.5	459.5	459.9
5	459.5	459.5	459.7	20	459.6	459.5	459.9
6	459.5	459.5	459.6	21	459.6	459.5	459.9
7	459.7	459.5	459.6	22	459.6	459.5	459.8
8	459.6	459.5	459.6	23	459.5	459.5	459.8
9	459.6	459.7	459.7	24	459.5	460.2	459.8
10	459.6	459.6	459.7	25	459.5	460.7	459.8
11	459.6	459.5	459.7	26	459.5	460.1	459.8
12	459.9	459.5	459.7	27	459.5	459.7	459.8
13	459.9	459.5	459.7	28	459.5	459.7	459.8
14	459.7	459.5	459.8	29	459.5	459.7	459.8
15	459.6	459.5	459.9	30	459.5	459.7	[a]
				31	459.5	459.7	......

[a] No record. Station discontinued September 29, 1917.

This station, established May 3, 1904, is located about 100 feet above the old State dam at Rome. The gage, a staff secured to an elm tree at the head of the Erie canal feeder, gives the elevation of water-surface above the dam. It is read once daily — at about 8 A. M. — to tenths, the hundredths in the table being due to the datum of the gage.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER ABOVE STATE DAM AT ROME, for the year ended June 30, 1918. John Phillips, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	432.43	432.13	432.33	432.43	432.53	432.33	431.93	431.73	432.03	432.93	432.03	431.73
2.....	432.33	432.03	432.43	432.33	432.43	432.23	431.83	431.73	431.93	432.93	431.93	431.83
3.....	432.33	432.03	432.33	432.33	432.43	432.33	431.73	431.73	431.93	432.93	431.93	431.73
4.....	432.23	432.03	432.33	432.43	432.33	432.23	431.73	431.83	431.93	432.93	431.93	431.83
5.....	432.03	432.13	432.13	432.43	432.33	432.23	431.83	431.93	431.83	432.93	431.93	431.73
6.....	432.03	432.13	432.13	432.43	432.23	432.33	431.93	431.83	431.93	432.93	431.83	431.73
7.....	432.13	432.03	432.23	432.33	432.23	432.43	432.03	431.83	431.83	432.83	431.93	431.83
8.....	432.03	432.03	432.33	432.13	432.33	432.33	432.03	431.73	431.83	432.93	431.83	431.83
9.....	432.13	432.13	432.23	432.03	432.23	432.23	431.93	431.83	431.83	432.93	431.93	431.73
10.....	432.13	432.13	432.23	432.03	432.13	432.23	432.03	431.73	431.93	433.03	431.93	431.83
11.....	432.23	432.03	432.23	432.03	432.33	432.33	432.13	431.73	431.83	432.93	431.83	431.83
12.....	432.43	432.03	432.13	432.13	432.43	432.23	432.13	431.73	431.83	433.03	431.83	431.93
13.....	432.43	432.03	432.13	432.03	432.53	432.13	432.03	431.83	432.03	432.93	431.93	431.83
14.....	432.33	432.13	432.23	432.13	432.53	432.03	431.93	431.83	432.23	432.93	431.83	431.83
15.....	432.33	432.13	432.33	432.13	432.43	431.93	431.93	431.93	432.23	432.93	431.93	431.83
16.....	432.23	432.03	432.33	423.23	432.53	431.93	431.83	431.83	432.33	432.83	431.83	431.73
17.....	432.33	432.03	432.23	432.13	432.53	431.93	431.93	431.73	432.33	432.83	431.73	431.73
18.....	432.43	432.13	432.23	432.23	432.43	431.93	431.93	431.73	432.33	432.83	431.73	431.73
19.....	432.43	432.13	432.33	432.23	432.53	431.83	431.83	431.63	432.43	432.83	431.73	431.73
20.....	432.33	432.03	432.43	432.33	432.63	431.93	432.03	431.83	432.43	432.43	431.73	431.73
21.....	432.33	432.03	432.33	432.23	432.63	431.93	431.93	431.93	432.43	432.03	431.73	431.83
22.....	432.23	432.13	432.43	432.13	432.73	432.03	431.93	432.03	432.43	431.93	431.73	431.83
23.....	432.13	432.03	432.33	432.33	432.73	432.13	431.83	431.93	432.43	431.93	431.83	431.83
24.....	432.03	432.43	432.33	432.53	432.63	432.13	431.83	431.93	432.33	431.93	431.73	431.83
25.....	432.03	432.43	432.33	432.53	432.53	432.03	431.93	431.93	432.33	431.93	431.73	431.73
26.....	432.13	432.43	432.23	432.43	432.43	431.93	431.83	431.93	432.33	431.93	431.83	431.83
27.....	432.13	432.43	432.23	432.33	432.43	431.93	431.93	431.83	432.33	432.03	431.93	431.83
28.....	432.03	432.33	432.43	432.23	432.33	432.03	432.03	431.93	432.53	432.03	431.73	431.83
29.....	432.03	432.23	432.33	432.23	432.23	431.93	431.93	......	432.73	432.03	431.83	431.73
30.....	432.13	432.33	432.33	432.43	432.23	431.93	432.03	......	432.83	432.03	431.73	431.93
31.....	432.13	432.33	......	432.53	......	431.83	431.93	......	432.93	......	431.83	......

This station, established May 3, 1904, is located at the old State dam at Rome. The gage, formerly a chain gage, now consists of a staff secured to the right abutment of the dam below the crest. It is read once daily — at about 8 A. M.— to tenths, the hundredths in the table being due to the datum of the gage.

This station was abandoned on December 31, 1917, and a new station established above the new retention dam, records for which began on February 1, 1918.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER BELOW STATE DAM AT ROME, for the year ended June 30, 1918. John Phillips, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	427.96	427.76	428.06	428.16	428.16	428.06	.....	.....	.....	.....	.....	.....
2	427.86	427.66	428.16	428.16	428.16	427.86	.....	.....	.....	.....	.....	.....
3	427.86	427.66	428.06	428.06	428.16	427.96	.....	.....	.....	.....	.....	.....
4	427.76	427.56	427.96	428.16	428.06	427.86	.....	.....	.....	.....	.....	.....
5	427.66	427.76	427.96	428.26	427.96	427.86	.....	.....	.....	.....	.....	.....
6	427.66	427.76	427.86	428.16	427.96	428.06	.....	.....	.....	.....	.....	.....
7	427.76	427.66	427.96	427.86	428.06	428.03	.....	.....	.....	.....	.....	.....
8	427.56	427.66	428.06	427.76	427.96	428.06	.....	.....	.....	.....	.....	.....
9	427.66	427.76	427.96	427.66	427.96	427.96	.....	.....	.....	.....	.....	.....
10	427.76	427.76	428.06	427.66	427.86	427.96	.....	.....	.....	.....	.....	.....
11	427.76	427.66	427.96	427.76	427.96	428.06	.....	.....	.....	.....	.....	.....
12	427.96	427.66	427.86	427.66	428.16	427.96	.....	.....	.....	.....	.....	.....
13	427.96	427.66	427.96	427.66	428.26	427.86	.....	.....	.....	.....	.....	.....
14	427.96	427.76	428.06	427.76	428.16	427.76	.....	.....	.....	.....	.....	.....
15	427.86	427.76	428.16	427.76	428.06	427.56	.....	.....	.....	.....	.....	.....
16	427.86	427.56	428.16	427.86	428.06	427.56	.....	.....	.....	.....	.....	.....
17	427.86	427.66	427.96	427.86	428.26	427.56	.....	.....	.....	.....	.....	.....
18	427.96	427.76	427.96	427.96	428.26	427.66	.....	.....	.....	.....	.....	.....
19	428.06	427.76	428.06	427.86	428.26	427.66	.....	.....	.....	.....	.....	.....
20	427.86	427.66	428.16	427.96	428.46	427.53	.....	.....	.....	.....	.....	.....
21	427.96	427.66	428.06	427.86	428.46	427.66	.....	.....	.....	.....	.....	.....
22	427.76	427.76	428.06	427.76	428.46	427.76	.....	.....	.....	.....	.....	.....
23	427.76	427.66	428.06	427.96	428.46	427.86	.....	.....	.....	.....	.....	.....
24	427.66	428.06	428.16	428.16	428.36	427.86	.....	.....	.....	.....	.....	.....
25	427.66	428.06	428.06	428.16	428.26	427.76	.....	.....	.....	.....	.....	.....
26	427.76	428.16	427.96	428.06	428.06	427.66	.....	.....	.....	.....	.....	.....
27	427.66	428.16	427.86	427.96	428.16	427.66	.....	.....	.....	.....	.....	.....
28	427.66	428.06	428.06	427.86	428.06	427.76	.....	.....	.....	.....	.....	.....
29	427.66	427.96	427.96	427.86	427.86	427.66	.....	.....	.....	.....	.....	.....
30	427.76	428.06	427.96	428.06	427.96	427.56	.....	.....	.....	.....	.....	.....
31	427.76	428.06	......	428.16	......	427.56	.....	.....	.....	.....	.....	.....

NOTE — This station was superseded by station above "retention dam."

MOHAWK RIVER ABOVE RETENTION DAM, ROME

This station, established December 15, 1916, is located above the new State retention dam at Rome. A standard slope gage was erected on the right bank of the river about 150 feet above the retention dam, and has a range of 5 feet, between elevations 426.0 and 431.0 (B. C. datum). A reference point was also measuring down from this point. The reference point is at elevation 434.0.

Readings are taken once daily, to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER ABOVE RETENTION DAM AT ROME, for the year ended June 30, 1918. John Phillips, Observer

DAY	Feb.	Mar.	April	May	June	DAY	Feb.	Mar.	April	May	June
1	427.4	427.6	428.4	427.7	427.6	16	427.3	427.7	428.4	427.6	427.6
2	427.5	427.6	428.5	427.6	427.7	17	427.3	427.7	428.3	427.5	427.5
3	427.3	427.6	428.4	427.6	427.6	18	427.2	427.7	428.4	427.5	427.5
4	427.4	427.5	428.3	427.6	427.7	19	427.1	427.8	428.3	427.5	427.6
5	427.5	427.6	428.4	427.6	427.6	20	427.3	427.8	428.0	427.5	427.5
6	427.5	427.6	428.4	427.5	427.7	21	427.3	427.8	427.7	427.6	427.6
7	427.4	427.6	428.4	427.6	427.7	22	427.4	427.7	427.7	427.6	427.6
8	427.3	427.6	428.5	427.5	427.7	23	427.4	427.7	427.7	427.7	427.6
9	427.3	427.5	428.4	427.6	427.6	24	427.3	427.8	427.6	427.6	427.5
10	427.4	427.6	428.6	427.7	427.7	25	427.4	427.7	427.5	427.6	427.6
11	427.3	427.5	428.4	427.5	427.6	26	427.3	427.7	427.6	427.6	427.6
12	427.2	427.5	428.6	427.6	427.8	27	427.3	427.6	427.7	427.7	427.6
13	427.1	427.6	428.5	427.7	427.7	28	427.5	427.8	427.7	427.6	427.6
14	427.2	427.7	428.6	427.6	427.6	29	......	428.1	427.7	427.6	427.5
15	427.3	427.7	428.6	427.6	427.6	30	......	428.2	427.6	427.6	427.6
						31	......	428.3	......	427.6	......

NOTE.— This station supersedes station " below State dam."

MOHAWK RIVER BELOW RETENTION DAM, ROME

This station, established February 1, 1918, is located on the canalized Mohawk river about 300 feet below the retention dam. A reference point is established at the east end of the north abutment and readings are made by measuring down from this point. The reference point is at elevation 432.0 (B. C. datum).

Readings are taken once daily to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER BELOW RETENTION DAM AT ROME, for the year ended June 30, 1918. John Phillips, Observer

DAY	Feb.	Mar.	April	May	June	DAY	Feb.	Mar.	April	May	June
1	420.2	420.5	420.4	420.4	420.4	16	420.1	420.8	420.5	420.0	420.0
2	420.2	420.5	420.4	420.5	420.4	17	420.0	420.8	420.4	419.4	419.4
3	420.2	420.6	420.3	420.4	420.3	18	420.0	420.9	420.4	419.2	419.4
4	420.1	420.5	420.5	420.3	420.3	19	420.0	421.0	420.4	420.0	419.4
5	420.2	420.6	420.6	420.5	420.4	20	420.2	420.5	420.3	419.2	419.2
6	420.1	420.6	420.7	420.5	420.4	21	420.3	420.5	420.5	420.0	419.9
7	420.1	420.6	420.6	420.5	420.5	22	420.3	420.6	420.4	420.2	420.3
8	420.1	420.5	420.5	420.5	420.5	23	420.3	420.7	420.4	420.2	420.5
9	420.1	420.5	420.6	420.6	420.5	24	420.2	420.6	420.3	420.2	420.5
10	420.2	420.5	420.5	420.5	420.4	25	420.3	420.6	420.2	420.3	420.6
11	420.2	420.4	420.3	420.5	420.5	26	420.3	420.5	420.3	420.2	420.5
12	420.0	420.5	420.3	420.4	420.6	27	420.2	420.5	420.4	420.3	420.5
13	420.0	420.6	421.0	420.5	420.6	28	420.4	420.4	420.5	420.3	420.5
14	420.0	420.7	421.0	420.6	420.6	29	......	420.3	420.6	420.3	420.4
15	420.1	420.7	420.9	420.5	420.5	30	......	420.3	420.4	420.4	420.5
						31	......	420.3	......	420.3	......

This station, established March 15, 1905, is located at the Genesee street bridge over the Mohawk river in the city of Utica. This bridge is about 3,600 feet below the new terminal lock and about 3,000 feet above the new terminal dam. This dam consists of an ogee crest 100 feet long at elevation 397.0 and 3 Taintor gates each of 30 feet span with sills at elevation 392.0. The function of the dam will be to maintain a low navigable surface of elevation 397.0 in the Utica canal terminal. The gage, formerly a staff secured to timber-work of right abutment, was replaced on May 8, 1913, by a chain gage on the downstream side of the bridge, which was used until September 23, 1915. The gage, temporarily secured to a pile just above the temporary bridge, was carried away by high water. A reference point on the new bridge is now used. It is read twice daily — at 8 A. M. and 5 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT GENESEE STREET BRIDGE, UTICA, for the year ended June 30, 1918. W. E. Young, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	396.7	397.85	398.65	398.85	399.95	398.35	394.2	393.9	397.6	......	......	......
2.....	396.45	397.96	398.7	398.65	399.95	399.0	394.2	393.9	396.4	......	......	......
3.....	396.3	398.0	398.65	398.45	399.75	398.4	394.15	393.9	396.1	......	......	......
4.....	396.2	397.9	398.55	398.5	399.55	398.0	394.25	393.8	395.95	......	......	......
5.....	396.1	397.85	398.45	398.4	399.0	397.85	394.35	393.8	395.8	......	......	......
6.....	395.9	397.75	398.4	398.3	398.9	397.8	394.4	393.9	397.15	......	......	......
7.....	395.85	397.65	398.3	398.55	398.85	397.75	394.55	393.9	397.05	......	......	......
8.....	395.85	397.6	398.25	398.6	398.8	397.55	394.0	393.85	395.8	......	......	......
9.....	396.05	398.55	398.15	398.6	398.85	397.5	394.1	393.8	395.65	......	......	......
10.....	396.4	399.0	398.1	398.4	398.85	397.25	394.05	393.8	395.55	......	......	......
11.....	396.95	398.9	398.1	398.4	398.8	393.6	394.1	393.8	395.4	......	......	......
12.....	397.65	398.55	398.0	398.5	398.8	393.55	394.15	393.85	395.5	......	......	......
13.....	397.7	398.35	398.0	398.6	398.8	393.55	394.1	393.65	395.8	......	......	......
14.....	397.9	398.1	398.0	398.75	398.55	393.6	394.2	393.7	397.65	......	......	......
15.....	398.45	397.85	397.9	398.85	398.45	393.6	394.2	394.5	398.45	......	......	......
16.....	398.75	398.0	398.1	399.35	398.75	393.6	394.2	395.6	397.75	......	......	......
17.....	398.7	397.95	398.3	395.75	398.7	393.6	394.2	395.0	398.5	......	......	......
18.....	398.55	397.8	398.4	398.65	398.85	393.6	394.2	394.75	399.5	......	......	......
19.....	398.4	397.7	398.45	397.6	398.75	393.7	394.2	394.85	400.15	......	......	......
20.....	398.05	397.7	398.5	399.95	398.75	393.9	394.1	397.95	401.0	......	......	......
21.....	397.85	397.6	398.4	398.4	398.7	394.0	394.05	399.65	401.75	......	......	......
22.....	397.8	397.55	398.3	399.3	398.85	394.8	394.0	397.95	402.25	......	......	......
23.....	397.75	397.55	398.3	397.8	399.8	394.8	394.0	396.4	401.75	......	......	......
24.....	397.6	397.75	398.2	398.4	399.2	395.0	394.0	396.05	400.3	......	......	......
25.....	397.6	398.0	398.2	400.05	398.75	394.95	394.0	395.85	398.55	......	......	......
26.....	397.6	398.2	398.2	400.05	398.6	394.85	394.0	398.1	398.6	......	......	......
27.....	397.6	398.45	398.1	399.15	398.1	394.7	394.0	398.35	398.5	......	......	......
28.....	397.7	398.55	398.25	399.8	397.8	394.5	394.1	398.15	398.4	......	......	......
29.....	397.85	398.6	398.45	399.85	397.8	394.35	394.05	......	398.55	......	......	......
30.....	398.0	398.7	398.6	400.5	397.75	394.25	394.0	......	398.95	......	......	......
31.....	397.85	398.6	......	400.6	......	394.2	393.9	......	399.05	......	......	......

NOTE.— Drop in water-surface on December 11, due to opening dam at Park avenue. Station abandoned March 31, 1918.

This station was established January 25, 1913, at the highway bridge over the Mohawk river on the Dyke road between Frankfort and North Frankfort about 10 miles east of Utica. The gage is a standard chain on the downstream side of the new steel bridge. It is read twice daily — at 8 A. M. and 4 P. M. — to tenths. The water-surface indicated is that of the river about 1,600 feet below the new retention dam and about 200 feet below the end of the land-line running east from Barge canal lock No. 19 at Sterling creek.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT FRANKFORT, for the year ended June 30, 1918. C. F. Loring, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	382.75	381.95	382.85	383.75	384.65	......	378.3	378.1	384.2	383.35	379.9	383.7
2.....	381.7	382.1	382.35	383.45	382.2	381.05	378.3	378.1	383.1	383.75	380.6	383.2
3.....	382.75	382.1	382.05	382.95	381.25	380.45	378.2	378.1	382.45	383.5	380.25	382.15
4.....	381.4	381.95	382.8	382.75	381.05	380.4	378.1	378.05	382.45	382.85	379.9	381.75
5.....	381.2	381.45	383.0	383.55	380.5	380.1	378.0	378.0	382.25	382.15	379.95	381.7
6.....	381.3	381.5	382.65	382.55	382.6	380.05	378.0	378.15	382.3	381.8	381.0	381.95
7.....	381.3	381.8	382.3	381.35	382.8	379.8	378.0	378.2	383.05	381.75	381.95	383.05
8.....	381.25	382.1	382.25	380.95	382.85	379.45	378.1	378.1	382.2	382.05	382.45	383.6
9.....	381.25	383.05	382.55	381.25	382.9	379.25	378.05	378.1	381.55	384.15	383.25	383.05
10.....	381.3	383.45	382.85	381.85	382.9	379.25	378.0	378.1	381.05	384.9	382.55	383.3
11.....	381.85	380.0	383.2	380.45	382.85	379.6	378.0	378.15	381.3	384.1	382.65	383.85
12.....	383.6	381.3	383.35	380.5	383.0	379.45	378.1	378.25	381.35	383.35	380.4	384.65
13.....	383.15	381.7	383.35	380.95	382.8	379.1	378.1	378.2	381.85	382.9	382.25	384.5
14.....	382.55	381.4	383.15	381.15	382.75	379.0	378.1	378.35	384.05	383.3	382.85	381.5
15.....	383.15	381.7	383.35	381.1	382.45	378.05	378.0	379.0	383.95	383.45	380.9	380.75
16.....	383.65	382.25	383.3	381.8	383.55	377.95	378.0	380.2	383.45	382.9	379.75	381.55
17.....	381.75	382.55	383.25	380.75	383.6	377.9	378.0	380.2	383.35	382.45	380.25	381.0
18.....	381.1	382.6	383.3	380.3	383.8	378.05	377.95	380.2	384.6	382.75	381.05	380.35
19.....	382.25	382.45	383.2	381.5	383.55	378.25	377.9	380.6	385.4	382.05	381.3	381.35
20.....	383.3	382.65	383.8	383.2	383.55	378.35	377.9	384.2	386.6	380.9	382.25	380.85
21.....	382.8	382.9	382.95	382.8	382.75	378.5	377.95	385.25	387.8	380.2	382.35	380.5
22.....	383.4	383.15	383.25	381.25	382.75	378.85	378.0	384.45	389.1	381.4	382.25	381.9
23.....	382.4	383.15	383.35	381.0	384.7	378.55	378.0	383.4	389.5	382.6	382.05	383.4
24.....	381.55	383.9	383.25	380.7	382.75	378.65	378.0	383.15	387.65	382.0	381.8	384.0
25.....	381.9	383.8	383.35	382.0	......	378.9	378.0	383.25	385.1	381.5	382.15	384.25
26.....	382.05	381.75	383.4	382.85	......	378.9	378.05	384.95	383.4	380.5	383.15	383.95
27.....	382.1	382.1	383.35	381.6	......	378.75	378.1	386.2	382.45	380.15	383.75	383.6
28.....	382.3	383.15	383.45	382.35	......	378.7	378.1	385.5	382.1	380.1	384.0	383.5
29.....	381.2	382.65	383.45	382.65	......	378.45	378.1	......	382.15	379.95	383.9	383.4
30.....	381.3	382.9	383.65	385.15	......	378.35	378.1	......	382.65	379.55	382.1	383.65
31.....	382.1	382.7	......	385.75	......	378.3	378.1	......	382.75	......	383.15	......

NOTE.— Elevations from November 25 to December 1, inclusive, not published; readings doubtful.

MOHAWK RIVER AT ILION

This station, established January 24, 1913, is located at the highway bridge over the Mohawk river opposite the village of Ilion and about 2 miles above Barge canal dam No. 14 at Herkimer. A standard chain gage, attached to the downstream truss near the center of the new bridge, is read to tenths twice daily — between 6 and 9 in the morning and 5 and 7 in the afternoon.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT ILION, for the year ended June 30, 1918. P. C. Earl, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	......	382.05	382.2	383.55	384.65	381.35	378.55	378.4	382.75	383.15	380.05	382.9
2	......	382.2	382.15	383.3	383.5	380.7	378.5	378.6	382.1	383.5	380.65	382.3
3	......	382.1	382.1	383.05	382.25	380.45	378.65	378.65	381.55	383.15	380.35	381.95
4	......	382.0	382.65	382.8	381.1	380.1	378.5	378.8	381.35	382.7	380.0	381.7
5	......	381.9	383.0	382.55	381.4	379.8	378.55	379.0	381.05	382.15	380.25	382.05
6	......	381.65	382.85	381.95	382.25	379.75	378.45	379.1	380.95	381.75	381.25	382.45
7	......	381.75	382.6	381.05	383.0	379.4	378.4	379.2	380.85	381.8	381.55	382.65
8	......	381.95	382.7	380.8	382.95	379.15	378.25	379.0	380.85	383.1	382.4	383.6
9	......	383.35	383.15	381.5	382.85	378.9	378.3	379.15	380.85	384.2	383.0	383.2
10	......	383.45	383.05	381.3	......	378.9	378.25	379.2	381.0	384.35	......	383.45
11	......	380.2	382.7	380.15	......	378.95	378.4	379.35	381.35	383.75	......	383.85
12	......	381.55	383.45	380.3	......	378.7	378.3	379.7	381.55	382.35	......	384.8
13	......	381.5	383.9	380.15	......	378.65	378.35	380.05	382.0	381.85	......	384.25
14	......	381.45	383.4	380.6	......	378.8	378.45	380.7	380.85	383.35	......	381.6
15	......	382.05	383.55	381.05	......	378.6	378.4	381.1	382.05	383.15	......	381.05
16	......	382.2	383.75	381.4	383.4	378.6	378.45	381.55	382.2	382.2	......	381.85
17	......	382.55	383.2	......	383.8	378.6	378.45	381.15	382.25	381.85	......	381.55
18	......	382.8	383.15	......	383.85	378.45	378.4	381.7	383.3	382.2	......	380.85
19	......	382.65	383.2	......	383.4	378.45	378.45	382.35	384.9	382.1	......	381.25
20	......	382.75	383.7	......	382.9	378.4	378.5	385.7	386.05	381.35	......	381.0
21	......	383.0	383.1	380.85	383.1	378.55	378.55	386.05	387.2	380.65	......	380.9
22	......	383.1	383.15	381.0	383.25	379.0	378.45	385.02	388.0	381.95	......	381.9
23	381.5	383.05	383.3	381.0	385.3	378.8	378.45	384.2	387.85	382.15	......	383.45
24	381.6	384.1	383.3	381.1	384.4	378.8	378.3	382.75	386.45	381.55	......	384.2
25	382.0	383.65	383.3	381.65	382.6	378.65	378.35	383.3	384.85	381.1	......	384.15
26	382.05	381.85	383.2	382.05	382.6	378.55	378.35	385.2	383.65	380.55	......	383.95
27	382.2	382.1	383.2	382.05	382.25	378.55	378.45	385.15	382.2	380.25	......	383.7
28	382.15	383.0	383.2	382.0	381.85	378.65	378.45	383.9	381.7	380.05	384.25	383.45
29	381.5	382.75	383.4	383.85	381.75	378.55	378.5	......	381.65	379.8	383.65	383.35
30	381.55	382.95	383.55	386.0	381.65	378.5	378.45	......	382.6	379.8	383.0	383.8
31	382.0	382.7	......	385.5	......	378.4	378.45	......	382.9	......	382.7	......

NOTE.— Elevations, July 1 to 22, October 17 to 20, November 9 to 15 and May 10 to 27, not published; readings doubtful.

MOHAWK RIVER AT MOHAWK STREET, HERKIMER

This station, established November 23, 1904, is located at the Utica and Mohawk Valley electric railway bridge over the Mohawk river at Mohawk street, connecting the villages of Herkimer and Mohawk. A standard chain gage is located on the upstream wing of the north, or left abutment of the bridge. This gage is about 70 feet above dam No. 14, which is of a movable type with a fixed sill at elevation 374.0. The gage also indicates closely the water-surface above the canal guard-gate at this locality. Readings are taken twice daily — morning and afternoon — to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT MOHAWK STREET BRIDGE, HERKIMER, for the year ended June 30, 1918. H. S. Bishton, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	383.15	381.38	......	383.80	384.50	380.60	378.50	378.40	382.25	382.05	......	......
2.....	381.60	381.45	......	383.55	381.95	380.60	378.50	378.48	381.45	381.75	......	......
3.....	381.92	381.38	......	383.18	380.75	380.60	378.50	378.40	380.85	381.70	......	......
4.....	381.35	381.50	382.82	383.05	380.88	380.68	378.50	378.32	380.50	381.35	......	......
5.....	381.15	381.52	382.80	383.52	380.85	380.35	378.50	378.35	380.42	381.05	......	......
6.....	381.10	381.60	382.70	383.30	380.80	380.00	378.50	378.35	380.35	380.85	......	......
7.....	381.20	381.82	382.50	382.05	382.70	379.70	378.50	378.35	381.15	380.75	......	......
8.....	[a]	382.02	382.72	380.82	383.28	379.10	378.50	378.35	381.10	381.30	......	......
9.....	381.25	383.10	382.75	380.82	383.20	378.60	378.50	378.35	380.50	383.60	......	......
10.....	381.88	382.88	383.22	380.55	383.32	378.65	378.50	378.35	380.18	383.78	......	......
11.....	381.88	380.52	383.65	380.58	383.20	378.60	378.60	378.40	380.00	383.20	......	......
12.....	383.92	381.58	383.45	380.72	383.15	378.60	378.55	378.42	380.05	382.40	......	......
13.....	382.92	381.82	383.72	380.75	383.22	378.50	378.50	378.60	380.10	381.85	......	......
14.....	382.75	382.02	383.55	380.92	382.95	378.55	378.50	378.80	380.48	381.62	......	......
15.....	383.75	382.15	383.40	380.90	383.20	378.50	378.50	379.18	381.60	381.70	......	......
16.....	383.48	382.25	383.45	......	383.25	378.55	378.50	379.70	381.88	381.60	......	......
17.....	381.95	382.40	383.55	......	383.22	378.60	378.50	380.32	381.98	381.35	......	......
18.....	380.98	382.62	383.12	......	383.22	378.60	378.50	380.68	382.40	......	......	......
19.....	381.92	382.55	382.82	......	383.10	378.60	378.50	383.80	383.20	......	......	......
20.....	383.02	382.70	383.75	......	383.12	378.68	378.50	385.10	383.80	......	......	......
21.....	383.05	382.90	383.20	......	383.20	378.60	378.50	385.15	384.50	......	......	......
22.....	382.15	382.98	383.30	......	383.12	378.60	378.50	384.50	385.20	......	......	......
23.....	381.82	383.05	383.45	......	383.55	378.60	378.50	382.55	385.62	......	......	......
24.....	381.75	383.80	383.52	380.92	382.40	378.60	378.50	382.05	385.45	......	......	......
25.....	381.78	383.00	383.38	381.70	382.38	378.65	378.50	382.60	384.85	......	......	......
26.....	382.00	......	......	382.00	382.00	378.60	378.50	384.80	382.85	......	......	......
27.....	382.12	......	......	382.10	381.40	378.80	378.50	384.42	381.45	......	......	......
28.....	382.20	......	......	382.28	381.20	378.80	378.50	382.85	381.48	......	......	......
29.....	381.28	......	......	382.72	380.70	379.10	378.50	......	381.90	......	......	......
30.....	381.28	......	......	382.45	380.72	379.00	378.45	......	382.20	......	......	......
31.....	381.32	......	......	384.80	......	379.10	378.40	......	382.25	......	......	......

[a] No record.

NOTE.— Elevations, August 26 to September 3, September 26 to 30, October 16 to 23 and April 18 to June 30, not published; readings doubtful.

This station, established February 4, 1913, is located at the Washington street bridge over the Mohawk river, opposite the village of Herkimer. It is about 4,700 feet below dam No. 14 and about 2,700 feet above the mouth of West Canada creek. This section of the river is not canalized. The gage is a standard chain attached to the upstream side of the bridge and is read twice daily — morning and afternoon — to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT WASHINGTON STREET BRIDGE, HERKIMER, for the year ended June 30, 1918. H. S. Bishton, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	377.18	374.88	376.18	375.23	378.15	375.35	375.70	375.85	381.05	377.40	374.65	*b*
2.....	376.12	374.90	376.18	375.48	377.30	375.35	375.72	375.85	379.50	377.18	375.12	*b*
3.....	376.08	374.92	376.10	375.38	376.42	375.45	375.70	375.60	378.50	376.90	375.55	*b*
4.....	375.72	374.88	*b*	375.38	376.12	375.65	375.70	375.60	378.20	376.98	375.75	*b*
5.....	375.42	374.78	*b*	375.54	376.10	375.70	375.70	375.40	378.12	376.82	375.65	*b*
6.....	375.40	374.80	*b*	375.56	376.02	375.75	375.70	375.40	378.10	376.80	375.75	*b*
7.....	375.22	374.82	*b*	375.65	375.90	375.90	375.70	375.48	378.75	376.82	375.30	*b*
8.....	*a*	374.80	*b*	375.73	375.80	376.05	375.70	375.45	378.70	377.10	375.05	*b*
9.....	375.32	374.82	*b*	375.63	375.65	376.20	375.70	375.30	378.10	378.30	*b*	*b*
10.....	375.42	377.75	*b*	375.88	375.72	375.80	375.70	375.52	377.70	378.62	*b*	*b*
11.....	375.55	375.00	*b*	375.80	375.58	375.45	375.90	375.60	377.40	378.20	*b*	*b*
12.....	376.30	375.40	*b*	375.65	375.50	375.35	376.10	375.60	377.40	377.40	*b*	*b*
13.....	376.35	375.18	*b*	375.56	375.42	375.20	376.00	376.00	377.35	376.80	*b*	*b*
14.....	376.12	375.02	*b*	375.59	375.55	375.02	376.10	376.22	377.80	376.85	*b*	*b*
15.....	376.05	374.98	*b*	375.67	375.60	375.10	376.10	376.55	377.95	376.98	375.42	*b*
16.....	376.72	375.05	*b*	376.30	375.52	375.10	376.00	377.20	377.72	376.90	374.35	*b*
17.....	376.20	375.05	*b*	376.82	375.50	375.10	376.00	377.80	377.92	376.65	374.95	*b*
18.....	375.85	375.02	*b*	375.76	375.52	375.00	376.00	378.10	378.05	377.35	375.08	*b*
19.....	375.38	375.00	*b*	375.80	375.60	374.80	375.80	381.30	378.80	376.60	375.02	*b*
20.....	375.65	375.05	375.09	376.08	375.68	374.70	375.80	382.60	379.45	376.40	375.02	*b*
21.....	375.60	375.10	375.07	376.15	375.78	374.60	375.80	382.60	380.15	376.85	374.95	*b*
22.....	375.55	375.22	374.98	376.08	375.85	374.60	375.80	381.90	380.78	376.75	374.88	*b*
23.....	375.62	375.28	375.02	376.18	376.98	374.60	375.80	381.00	380.85	376.50	374.88	*b*
24.....	375.32	376.90	374.90	376.15	376.30	374.60	375.80	380.60	380.85	376.22	374.80	*b*
25.....	375.22	377.80	374.92	376.02	376.10	374.65	375.80	380.75	380.05	376.02	374.85	*b*
26.....	375.15	376.58	374.94	376.12	375.52	374.60	375.80	383.00	378.20	375.88	375.02	*b*
27.....	375.12	376.10	374.92	376.48	375.40	374.95	375.80	382.35	376.62	375.88	376.45	*b*
28.....	375.08	375.85	375.11	376.78	375.50	375.10	375.90	382.00	376.65	375.78	379.05	*b*
29.....	374.92	376.00	375.11	377.15	375.35	375.50	375.90	......	377.40	375.58	380.05	*b*
30.....	374.92	376.12	375.15	377.75	375.38	375.70	375.85	......	377.55	374.85	379.25	*b*
31.....	374.88	376.20	......	378.12	......	375.75	375.90	......	377.78	......	378.20	......

a No record. *b* Gage out of place.

MOHAWK RIVER ABOVE STATE DAM, LITTLE FALLS

This station, established February 4, 1904, is located just above the upper, or State dam on the Mohawk river at Little Falls. A staff gage, attached to the west wing-wall of the culvert

400 feet upstream from the Hanson avenue bridge over the old canal feeder, was used until October 1, 1916. From that date until July 5; 1917, the concrete gate on the south wall of the Little Falls guard-gate was used. On July 5, 1917, a standard Type A gage was secured to the upper return wall of the south abutment of the guard-gate. This gage has a range of 12 feet, between elevations 360.0 and 372.0. A standard bench-mark plug was set in the wall near the gage at elevation 371.0 (B. C. datum). The State dam with crest averaging about elevation 363.0* is not affected by Barge canal construction.

Readings are taken twice daily — morning and afternoon — to tenths, with occasional readings to half-tenths.

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* EMENDATION.— Incorrectly published as 63.0, instead of 363.0, in Report of State Engineer and Surveyor for 1917, page 346.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER ABOVE STATE DAM AT LITTLE FALLS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	365.05	363.6	363.9	363.85	366.35	364.35	363.65	363.8	365.25	365.35	364.85	364.18
2.....	365.0	363.65	363.95	363.9	365.32	364.4	363.7	363.8	365.0	365.5	365.0	364.0
3.....	364.6	363.7	363.88	363.88	364.85	364.35	363.6	363.88	365.25	365.5	364.85	363.9
4.....	364.2	363.75	363.85	363.9	364.6	364.2	363.7	363.8	364.85	365.05	364.7	363.8
5.....	364.0	363.75	363.8	363.98	364.45	364 15	363.6	363.8	364.6	364.85	364.5	363.75
6.....	363.95	363.7	363.62	364.0	364.4	363.85	363.6	363.95	364.7	364.7	364.3	363.65
7.....	364.1	363.65	363.05	363.95	364.4	363.65	363.7	363.95	364.85	364.8	364.25	363.7
8.....	364.05	363.7	363.6	363.8	364.4	363.25	363.75	363.9	364.7	364.85	364.0	363.85
9.....	363.9	363.7	363.65	363.85	364.4	363.2	363.78	363.95	364.55	365.4	364.05	363.95
10.....	363.9	363.75	363.7	363.92	364.28	363.6	363.72	363.95	364.45	365.65	364.05	364.0
11.....	364.0	363.7	363.65	363.85	364.15	363.5	363.7	363.9	364.35	365.3	364.0	364.0
12.....	364.15	363.7	363.65	363.8	364.1	363.8	363.7	363.9	364.4	365.1	364.0	364.92
13.....	363.95	363.7	363.65	363.98	364.2	363.65	363.7	364.0	364.7	365.05	364.6	365.05
14.....	363.95	363.7	363.68	363.98	364.25	363.65	363.65	364.1	364.45	365.3	365.15	364.6
15.....	364.1	363.7	363.7	363.95	364.2	363.6	363.7	364.35	365.35	365.15	364.85	364.25
16.....	364.3	363.7	363.75	364.02	364.3	363.5	363.7	364.5	364.9	364.95	364.2	364.15
17.....	364.15	363.8	363.7	364.2	364.18	363.7	363.6	364.5	365.1	365.0	364.15	364.05
18.....	364.0	363.8	363.6	364.3	364.2	364.05	363.7	364.45	365.85	365.6	364.0	363.95
19.....	363.9	363.75	363.6	364.32	364.28	363.65	363.9	364.35	365.85	365.75	363.95	363.75
20.....	363.85	363.65	363.7	365.12	364.2	363.65	363.9	366.35	366.15	365.35	363.95	363.62
21.....	363.8	363.6	363.7	365.2	364.15	363.6	363.9	365.7	366.5	365.65	364.1	363.55
22.....	364.0	363.55	363.7	364.6	364.2	363.5	363.8	365.35	366.9	366.15	364.1	363.7
23.....	364.0	363.6	363.7	364.5	364.55	363.4	363.8	364.9	367.0	365.65	364.2	363.8
24.....	363.9	363.85	363.7	364.4	364.55	363.3	363.8	364.7	366.15	365.25	364.1	363.75
25.....	363.8	363.78	363.68	364.5	364.45	363.2	363.8	364.55	365.65	365.1	364.0	363.65
26.....	363.6	364.18	363.7	364.8	364.4	363.45	363.8	365.5	365.35	364.7	364.1	363.6
27.....	363.6	363.9	363.6	364.68	364.4	363.65	363.85	365.65	364.95	364.55	364.35	363.5
28.....	363.6	363.8	363.72	364.75	364.3	363.7	363.85	365.65	364.8	364.6	364.38	363.5
29.....	363.8	363.8	363.7	364.95	364.4	363.65	363.8	......	364.95	364.6	364.22	363.4
30.....	363.65	363.85	363.7	366.4	364.35	363.55	363.8	......	365.15	364.7	364.18	363.75
31.....	363.6	363.8	......	366.98	......	363.5	363.8	......	365.3	......	364.0	......

This station is located on the Mohawk river at the lower end of lock No. 17 in the city of Little Falls. It is about 3.7 miles above and at the head of the canalized pool formed by the Rocky Rift dam and about 0.9 mile above the suspension bridge. The concrete vertical staff gage at the lower end of the lock is read irregularly by the local engineering force.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT LOCK No. 17, LITTLE FALLS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.
1	......	322.5	......
2	......	322.4	......
3	322.3	322.4	322.4
4	321.7	......	322.5
5	......	......	322.5
6	......	......	322.5
7	......	322.5	322.5
8	......	322.5	322.5
9	......	322.3	......
10	321.2	323.5	......
11	321.2	......	......
12	321.6	......	......
13	321.6	322.3	......
14	......	322.3	......
15	......	321.9	......
16	......	322.3	......
17	321.5	322.4	......
18	......	......	......
19	......	......	......
20	......	322.3	......
21	321.3	......	......
22	......	......	......
23	321.2	......	......
24	320.8	......	......
25	320.8	......	......
26	320.8	......	......
27	......	......	......
28	......	......	......
29	......	......	......
30	322.5	......	......
31	322.5	......	......

NOTE.— No readings, October to June.

This station indicates the water-surface in the Barge canal above the guard-gate at Indian Castle, about 5 miles east of Little Falls. Castle creek enters the Barge canal from the south, just west, or above the guard-gate, and is diverted westward through the canal land-line about 3,400 feet, entering the Mohawk river just above the Rocky Rift dam. Low navigable surface in this section of the canal is at elevation 322.5.

A vertical staff gage on the upstream, or west face of the guard-gate, is read irregularly by the local engineering force.

Daily elevation of water-surface (B. C. datum) of BARGE CANAL ABOVE GUARD-GATE, INDIAN CASTLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	......	......	322.8	321.8	325.7	323.2	320.6	320.5	......	......	......	322.1
2	322.2	......	......	......	324.2	323.0	320.6	320.5	......	......	......	322.0
3	......	......	......	321.9	323.3	322.8	320.6	......	......	......	......	321.9
4	......	322.6	......	321.9	323.1	322.7	320.6	320.5	......	......	......	321.8
5	321.2	......	......	322.2	322.8	321.6	320.7	320.5	......	......	321.9	321.8
6	321.1	322.4	......	......	322.6	321.0	......	320.6	......	......	......	321.6
7	320.6	......	......	......	322.7	320.7	320.7	320.6	......	......	......	321.8
8	......	......	......	321.8	322.7	320.5	320.7	320.7	......	......	......	321.9
9	320.9	......	322.6	322.0	322.7	320.5	320.7	320.7	......	......	......	321.9
10	......	......	322.5	322.0	322.7	320.5	320.7	......	......	......	321.1	321.9
11	321.2	322.9	322.5	322.0	322.6	320.7	320.7	320.6	......	......	321.2	322.0
12	321.6	......	322.6	321.6	322.7	320.7	320.8	320.7	......	......	......	323.3
13	321.6	......	322.6	......	322.6	320.6	......	320.7	......	......	......	323.9
14	321.0	......	322.6	......	322.7	320.5	320.8	320.9	......	......	......	323.3
15	......	......	322.6	321.9	322.6	320.4	320.7	321.0	......	......	......	322.9
16	321.8	......	......	322.7	322.6	320.3	321.0	321.1	......	......	......	322.5
17	......	......	322.6	322.4	322.6	......	321.0	......	......	......	......	322.4
18	321.3	322.4	322.7	322.7	322.6	......	320.8	321.0	......	......	......	322.2
19	321.3	322.3	322.7	322.5	322.7	320.8	320.7	323.0	......	......	......	322.0
20	321.0	......	322.8	......	322.6	320.6	......	325.8	......	......	......	322.0
21	321.8	322.3	322.7	......	322.8	320.6	320.7	324.1	......	......	......	322.0
22	......	322.4	322.7	322.9	322.6	320.6	320.7	......	......	......	......	322.0
23	......	322.4	......	......	323.6	......	320.7	......	......	......	......	322.9
24	......	322.6	322.6	......	323.3	......	320.7	......	......	......	......	322.9
25	......	324.1	322.9	......	324.1	......	320.7	......	......	......	......	322.6
26	......	......	322.8	......	323.5	320.8	320.7	326.8	......	......	322.3	323.0
27	320.9	323.2	322.4	......	322.5	320.7	......	325.3	......	......	......	322.7
28	322.4	323.0	322.4	......	322.4	320.7	320.6	......	......	......	......	322.9
29	......	323.0	322.3	323.1	322.5	320.5	320.6	......	......	......	......	322.8
30	......	323.3	......	324.6	322.6	......	320.6	......	......	......	......	322.9
31	......	322.8	......	326.2	......	320.6	320.6	......	......	......	......	......

MOHAWK RIVER AT ST. JOHNSVILLE

This station, established January 22, 1913, is located at the highway bridge crossing the Mohawk river at the village of St. Johnsville. It is about 1.3 miles below the Mindenville retention dam opposite Barge canal lock No. 16 and about 5.3 miles above the movable dam (No. 11) at Fort Plain. A standard chain gage attached to the upstream side of the bridge is read twice daily — at about 8 A. M. and 4 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT ST. JOHNSVILLE, for the year ended June 30, 1918. H. C. Dowling, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	302.65	301.15	301.5	301.5	304.3	301.45	296.8	296.85	302.3	302.6	299.8	302.6
2.....	302.0	301.2	301.7	302.15	302.75	301.55	296.8	296.75	301.45	302.65	300.35	302.2
3.....	301.8	302.0	301.3	301.8	302.25	298.65	296.75	296.7	301.05	302.4	301.75	302.25
4.....	301.65	302.0	301.85	301.9	302.25	297.5	296.85	296.55	300.7	300.7	301.6	302.35
5.....	301.55	300.9	301.3	302.15	301.6	296.6	296.8	296.4	300.4	299.95	300.7	302.15
6.....	301.65	301.85	301.3	302.1	301.6	296.45	296.8	296.45	300.75	299.65	300.75	302.15
7.....	301.7	301.75	301.6	301.75	301.65	297.45	296.9	296.45	301.7	299.65	300.8	302.3
8.....	301.4	301.35	301.4	301.65	301.9	297.5	296.9	296.5	301.45	299.85	300.2	302.3
9.....	301.5	301.9	301.15	301.75	301.8	296.75	296.85	296.5	300.5	303.0	300.3	302.3
10.....	302.05	302.35	301.2	302.0	301.7	296.8	296.85	296.55	300.4	302.1	301.0	302.7
11.....	301.75	301.2	301.95	301.9	301.55	297.05	296.8	297.55	300.1	300.5	300.2	302.4
12.....	302.3	301.8	300.9	301.4	301.85	297.6	296.85	296.65	300.25	300.05	300.75	303.35
13.....	301.75	301.95	301.2	302.2	301.6	298.0	296.75	296.75	301.0	299.4	302.9	303.0
14.....	301.65	301.5	301.8	301.85	301.65	297.35	296.65	297.2	302.45	299.9	302.8	302.7
15.....	302.1	302.15	301.65	301.75	301.3	297.35	296.95	297.65	302.7	300.15	302.8	302.45
16.....	301.5	301.65	301.35	301.9	301.6	297.3	297.45	298.5	302.0	300.0	302.1	302.35
17.....	301.95	301.95	301.55	301.6	301.95	297.25	296.85	298.6	301.45	300.3	302.6	302.25
18.....	301.9	301.25	301.8	301.8	301.9	297.25	296.8	298.6	304.4	302.35	301.9	302.1
19.....	301.55	301.55	301.1	301.6	302.1	298.0	296.75	298.6	305.0	302.05	302.35	302.25
20.....	301.8	301.65	301.7	302.55	301.6	297.8	296.8	303.8	306.7	300.7	302.75	302.2
21.....	301.8	301.7	301.7	302.3	301.85	297.65	296.8	304.15	308.55	300.05	302.35	301.95
22.....	301.65	301.55	301.6	301.65	301.8	297.55	296.8	302.95	310.8	301.85	302.6	302.0
23.....	301.5	301.8	301.5	301.9	302.4	297.3	296.8	301.8	305.9	301.85	302.2	302.35
24.....	301.55	302.0	301.35	301.85	301.55	297.25	296.8	301.15	302.9	300.55	302.55	302.5
25.....	301.1	302.1	301.45	302.35	301.3	297.55	296.75	300.8	302.2	299.8	302.3	302.2
26.....	301.75	301.5	301.75	302.3	301.3	297.6	296.7	302.5	301.1	298.9	302.35	302.05
27.....	300.9	301.9	301.8	301.9	301.55	297.95	296.75	303.55	299.6	299.05	302.9	302.15
28.....	301.4	301.3	301.65	302.5	300.5	297.6	296.7	303.4	298.95	299.45	302.5	302.35
29.....	301.35	301.4	302.05	302.55	300.55	296.8	296.6	......	299.6	299.35	302.35	302.2
30.....	301.95	301.5	301.2	304.65	301.7	296.75	296.7	......	300.05	299.6	302.2	302.35
31.....	301.5	301.7	......	305.5	......	296.9	296.8	......	301.6	......	302.5	......

This station, established December 30, 1905, is located at the River street highway bridge over the Mohawk river, connecting the villages of Fort Plain and Nelliston. It is about 0.4 mile below the movable dam (No. 11) at Fort Plain and about 2.9 miles above the movable dam (No. 10) at Canajoharie. The gage is a standard chain secured to the downstream side of the bridge, about 50 feet from the south, or right abutment and is read twice daily — at about 8 A. M. and 5 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT FORT PLAIN, for the year ended June 30, 1918. Clark Keyser, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	293.85	292.5	292.55	293.95	295.7	293.5	288.2	288.1	297.6	293.3	292.15	294.15
2.....	293.55	292.4	292.45	293.35	294.3	292.9	288.3	288.1	296.75	293.85	292.6	294.4
3.....	294.05	292.65	292.45	293.2	294.1	291.8	288.4	288.1	296.05	293.95	293.9	294.4
4.....	294.15	293.0	293.35	293.15	293.7	288.75	288.45	288.1	295.45	292.1	293.75	294.05
5.....	294.45	292.4	293.2	293.55	293.8	287.7	288.5	288.1	295.15	291.2	293.55	294.05
6.....	294.75	292.6	293.5	293.85	293.65	287.05	288.3	288.2	295.3	290.7	293.3	294.3
7.....	293.5	292.55	293.6	293.6	293.55	287.75	288.2	288.2	296.3	290.8	293.1	294.5
8.....	293.15	292.25	293.6	293.5	293.9	288.55	287.75	288.2	295.5	291.2	292.8	294.2
9.....	293.0	292.85	293.35	293.25	293.85	290.55	288.25	288.2	294.85	294.45	293.05	294.2
10.....	293.35	292.8	293.45	293.55	293.9	289.85	288.45	288.2	294.8	293.45	293.9	294.7
11.....	294.85	292.15	293.75	293.6	294.0	289.7	288.55	288.3	294.45	292.25	293.05	294.3
12.....	293.3	292.65	293.55	203.05	294.25	289.6	288.3	288.4	294.2	291.45	294.25	294.95
13.....	293.75	292.8	293.6	294.0	293.5	289.05	288.3	288.6	29[illegible].3	290.55	295.25	294.9
14.....	293.1	292.25	294.1	293.6	293.5	288.55	288.2	289.15	297.55	201.4	295.65	294.5
15.....	292.9	292.6	293.7	293.65	293.65	287.95	288.7	290.0	297.15	291.35	295.1	294.25
16.....	293.25	292.55	293.8	293.8	293.55	288.1	289.2	291.05	296.5	291.2	294.25	294.3
17.....	293.1	292.85	293.9	293.6	294.3	288.4	288.45	291.95	296.0	291.4	294.3	294.3
18.....	292.85	292.2	294.1	293.55	294.15	288.65	288.45	301.25	298.9	293.65	294.25	293.8
19.....	293.1	292.65	293.85	293.55	293.65	289.0	288.35	300.3	299.45	293.3	294.15	294.05
20.....	292.55	292.45	294.1	294.75	293.4	288.95	288.3	299.6	301.5	291.95	294.3	293.95
21.....	292.35	292.25	293.55	294.2	293.9	288.45	288.25	299.15	302.35	292.0	294.35	293.85
22.....	292.3	292.75	293.95	293.75	293.95	288.3	288.35	298.65	303.75	293.15	294.4	293.9
23.....	292.3	292.8	293.65	293.75	294.15	288.4	288.3	297.4	300.6	293.0	294.25	294.35
24.....	292.4	292.65	293.1	293.55	293.95	288.45	288.35	296.2	294.85	291.95	294.1	294.3
25.....	292.55	293.55	292.85	293.85	293.6	288.9	288.4	295.95	293.6	290.95	293.95	294.25
26.....	292.65	292.45	293.2	294.1	294.7	288.85	288.3	298.25	292.7	289.95	294.25	294.2
27.....	292.2	292.4	292.9	293.8	294.65	288.95	288.25	299.05	290.9	289.6	294.45	293.95
28.....	292.65	292.55	292.95	294.35	292.7	288.45	288.15	298.8	290.2	289.45	294.15	294.05
29.....	292.3	292.8	293.55	294.05	293.0	288.2	288.1	......	291.0	290.25	294.15	293.95
30.....	292.8	292.5	293.55	296.75	293.45	288.2	288.1	......	291.8	291.55	294.15	294.7
31.....	292.45	292.65	......	297.5	......	288.2	288.1	......	292.25	......	294.6	......

MOHAWK RIVER AT CANAJOHARIE

This station, established September 16, 1908, is located at the highway bridge over the Mohawk river connecting the villages of Canajoharie and Palatine Bridge. It is about 1,900 feet below the movable dam (No. 10) at Canajoharie. A standard chain gage attached to the bridge is read twice daily to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT CANAJOHARIE, for the year ended June 30, 1918. Sanford Bracebridge and Guy Bracebridge, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	286.0	284.6	284.8	284.4	288.1	284.1	279.8	279.8	291.0	285.1	283.5	285.5
2.....	285.3	284.45	284.4	284.3	286.6	284.0	279.8	279.8	290.0	285.1	284.2	285.7
3.....	285.1	284.5	284.5	284.4	285.8	283.9	279.8	279.8	289.1	285.1	284.4	285.1
4.....	284.4	284.65	284.3	284.5	285.1	280.4	279.8	279.8	288.9	284.5	285.3	285.1
5.....	285.0	285.0	284.4	284.7	285.1	280.3	279.8	279.8	288.9	284.4	286.1	285.5
6.....	284.85	284.2	284.0	284.8	285.1	279.5	279.8	279.8	288.9	284.4	285.5	285.8
7.....	284.6	284.5	284.2	284.8	284.8	279.6	279.8	279.8	288.8	283.7	285.4	285.4
8.....	284.55	284.8	284.2	284.4	284.6	280.6	279.8	279.8	288.4	283.7	284.5	285.1
9.....	285.1	284.7	284.2	284.8	284.5	280.8	279.8	279.8	288.4	286.5	284.7	285.1
10.....	285.1	285.1	284.1	284.4	284.6	280.9	279.8	279.8	288.1	287.1	285.1	285.4
11.....	285.1	284.8	284.2	284.4	284.6	281.0	279.8	279.8	288.1	285.7	285.1	285.7
12.....	284.95	284.8	284.1	284.4	285.3	280.6	279.8	279.8	287.7	285.0	285.3	285.65
13.....	284.9	284.5	284.4	284.3	284.6	279.9	279.8	280.3	289.1	283.7	285.9	286.7
14.....	285.2	284.7	284.3	284.5	284.5	279.8	279.8	281.3	290.3	284.4	288.1	285.2
15.....	284.6	284.8	284.4	285.0	284.5	279.8	279.8	383.3	290.3	284.3	286.7	285.2
16.....	285.1	284.1	284.2	285.2	284.6	279.9	279.8	284.5	290.1	284.1	286.1	285.5
17.....	285.1	284.8	284.2	284.8	284.5	279.8	279.8	284.0	289.1	284.1	285.5	285.5
18.....	285.3	284.5	284.4	284.8	284.6	279.9	279.8	284.0	291.5	286.7	286.4	285.4
19.....	285.0	284.5	284.7	285.4	284.6	280.1	279.8	284.0	292.4	285.8	285.1	285.4
20.....	285.0	284.8	285.1	285.1	284.6	279.8	279.8	295.1	293.1	285.8	285.4	285.4
21.....	284.6	284.7	284.2	285.8	284.6	279.8	279.8	292.8	295.0	286.1	285.8	285.2
22.....	284.7	284.4	284.25	285.1	284.7	279.8	279.8	291.2	296.0	287.2	285.7	285.4
23.....	284.5	284.8	284.3	285.6	284.9	279.8	279.8	289.5	295.5	286.4	285.1	285.8
24.....	284.4	284.8	284.3	285.1	285.2	279.8	279.8	289.5	290.2	285.6	285.1	285.4
25.....	284.9	284.7	284.4	285.1	285.1	279.8	279.8	289.1	287.4	285.0	285.1	285.2
26.....	285.1	284.8	284.5	285.1	284.9	280.5	279.8	293.1	285.7	282.7	285.1	285.2
27.....	284.5	284.9	284.5	285.1	284.9	280.5	279.8	291.8	283.8	284.4	285.1	284.3
28.....	284.1	284.6	284.7	285.1	284.6	280.5	279.8	291.6	283.5	283.5	285.1	284.3
29.....	284.1	285.2	284.7	285.5	284.6	280.5	279.8	......	284.5	283.4	285.4	284.3
30.....	284.4	284.5	284.5	291.8	284.7	280.3	279.8	......	284.7	283.9	285.3	285.3
31.....	284.7	285.1	......	290.8	......	280.3	279.8	......	284.5	......	285.4	......

This station, established April 29, 1906, is located at the highway bridge over the Mohawk river connecting the villages of Fonda and Fultonville. This bridge is about 4.6 miles below movable dam No. 9, near Yosts, and about 5 miles above movable dam No. 8 and the mouth of Schoharie creek at Tribes Hill.

Previous to 1913 discharge was computed at this station, but this was discontinued, owing to the destruction of the control, due to Barge canal construction work, and the station has since been maintained for surface elevations only.

A standard chain gage attached to the downstream side of the middle span of the bridge is read twice daily to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT FULTONVILLE BRIDGE, FONDA, for the year ended June 30, 1918. Richard Kilmartin, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	278.6	278.4	*a*	278.4	279.95	277.15	272.15	272.6	278.8	277.8	275.9	278.1
2.....	278.2	278.45	278.1	278.55	278.2	277.0	272.0	272.6	278.35	278.8	276.4	278.0
3.....	278.95	278.4	278.05	278.45	277.1	276.9	272.3	272.7	277.8	278.95	276.45	278.2
4.....	278.1	278.2	278.45	278.5	278.2	274.9	272.4	272.6	277.1	277.3	278.4	278.05
5.....	278.15	278.1	278.25	278.55	278.25	273.9	272.5	272.6	277.0	276.45	277.8	278.45
6.....	277.9	278.2	278.45	278.25	278.0	272.65	272.4	272.5	277.0	276.1	278.4	278.3
7.....	278.35	278.25	278.55	278.3	278.25	272.0	272.45	272.6	278.45	275.7	278.25	278.45
8.....	278.3	278.3	278.55	278.45	278.1	271.9	272.65	272.6	277.7	275.9	278.15	277.85
9.....	278.25	278.45	278.5	278.55	278.25	272.4	273.0	272.7	276.8	278.6	277.8	278.1
10.....	278.25	278.65	278.4	278.48	278.45	272.65	272.75	272.7	276.4	278.4	278.25	278.45
11.....	278.6	278.1	278.55	278.55	278.5	273.35	272.8	272.6	276.05	277.35	278.4	278.35
12.....	278.4	278.4	278.35	278.45	278.3	273.45	272.65	272.6	276.3	276.5	278.5	279.15
13.....	278.45	278.65	277.9	278.6	278.35	272.75	272.6	272.7	277.3	275.9	279.3	278.6
14.....	278.6	278.5	278.25	278.5	278.45	272.9	272.7	273.65	279.7	276.4	279.75	278.35
15.....	278.9	278.3	278.4	278.3	278.3	272.8	272.7	274.35	*a*	277.1	278.65	278.55
16.....	278.4	278.45	278.5	277.6	278.1	272.4	272.8	280.4	278.65	276.45	278.35	278.2
17.....	278.1	278.4	278.3	278.55	278.1	272.3	273.0	*a*	277.8	276.3	278.45	278.2
18.....	278.1	278.35	278.2	278.8	278.0	272.8	273.0	279.2	280.7	278.5	278.35	278.3
19.....	278.3	278.4	278.45	278.1	278.05	273.55	272.75	278.85	281.45	278.3	278.1	278.5
20.....	278.35	278.45	278.25	279.2	278.3	273.35	272.7	283.1	282.1	277.1	278.55	278.05
21.....	278.1	278.4	278.2	279.2	277.9	273.05	272.6	281.3	282.2	276.2	278.25	278.4
22.....	278.0	278.45	278.3	278.3	277.85	272.5	272.6	278.95	283.4	278.0	278.25	278.35
23.....	278.1	278.4	278.0	278.55	278.4	272.8	272.6	277.95	282.15	278.0	278.45	277.8
24.....	278.0	278.4	278.35	278.65	277.5	272.5	272.7	277.2	280.4	277.1	278.35	278.5
25.....	278.25	278.3	278.3	278.75	277.6	*a*	272.7	276.85	278.85	276.5	278.5	278.25
26.....	278.45	278.0	278.35	278.2	277.3	273.0	272.6	280.0	278.05	275.15	278.5	278.3
27.....	278.2	278.3	278.4	278.0	277.15	273.15	272.6	279.9	276.55	274.4	278.65	278.2
28.....	278.35	278.4	278.55	279.0	277.6	273.15	272.45	279.7	275.2	274.6	278.4	278.2
29.....	278.3	278.3	278.2	278.4	277.25	272.95	272.4	......	275.75	275.3	278.25	278.25
30.....	278.35	278.45	278.3	281.4	277.05	272.4	272.6	......	276.85	275.65	278.2	278.2
31.....	278.35	278.75	......	283.05	......	272.05	272.6	......	277.5	......	278.55	......

a No record.

This station, established January 7, 1904, is located at the suspension bridge over the Mohawk river connecting the villages of Tribes Hill and Fort Hunter. This bridge lies just below movable dam No. 8 at Tribes Hill and over the lower guide-wall of Barge canal lock No. 12.

Discharge was formerly computed at this station, but this was discontinued because of the destruction of the control, due to Barge canal construction. The station is now maintained for water-surface elevations only. The gage is a standard chain, attached to the downstream side of the bridge near the left bank or north end and is read twice daily — at about 8 A. M. and 4 P. M.— to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT TRIBES HILL, for the year ended June 30, 1918. A. W. Van Vliet, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	267.85	267.2	266.85	266.9	269.85	265.85	262.3	261.9	266.15	267.3	265.25	267.0
2	267.5	267.1	267.25	267.3	268.0	266.15	262.3	261.85	266.75	268.0	265.8	267.15
3	267.5	267.2	267.0	267.25	266.8	265.65	262.2	261.7	266.3	268.25	264.6	267 0
4	267.35	267.1	267.45	267.2	267.3	264.25	262.05	261.7	265.0	267.15	266.65	266.95
5	267.05	266.75	267.2	267.3	267.45	264.15	262.0	261.7	264.6	266.2	267.0	267.0
6	266.6	266.7	267.25	267.35	266.1	263.55	262.0	261.75	365.1	265.5	266.45	267.05
7	267.2	267.15	267.35	267.2	267.3	262.55	262.0	261.8	266.85	265.5	266.8	266.95
8	267.3	267.1	267.3	266.7	267.15	261.75	262.0	261.9	265.35	265.45	266.75	267.15
9	267.3	267.3	267.25	267.2	267.2	263.2	262.0	261.9	264.3	267.7	266.65	267.3
10	267.45	267.25	267.2	267.3	267.35	263.05	262.0	261.9	263.65	268.1	267.15	267.05
11	267.15	267.05	267.25	267.4	267.55	263.0	262.0	261.9	263.5	267.15	267.1	267.05
12	267.35	267.2	267.3	266.95	267.4	263.5	262.0	261.95	263.5	266.5	267.25	267.6
13	267.35	267.15	267.1	267.45	267.15	263.5	262.0	262.35	266.6	265.75	266.75	267.65
14	267.4	266.95	267.25	267.3	267.4	263.5	261.9	264.7	267.7	266.25	268.25	267.35
15	267.55	267.0	266.9	267.25	267.35	263.45	261.9	265.75	266.35	267.6	267.2	266.9
16	267.4	267.1	266.7	267.05	267.25	263.05	261.85	273.65	265.75	267.1	267.15	267.1
17	267.4	266.7	267.25	267.1	267.2	262.9	261.85	272.3	265.2	266.65	267.0	267.2
18	267.35	266.95	267.25	267.6	267.2	262.9	261.9	271.85	268.15	268.15	267.2	267.05
19	267.2	266.85	267.2	267.25	267.0	263.25	261.95	271.9	268.25	268.35	266.8	266.85
20	267.05	266.85	267.15	267.75	267.35	263.15	261.9	276.15	268.85	267.15	267.05	267.25
21	267.05	267.15	267.2	267.6	267.15	262.95	261.9	269.5	269.75	266.25	266.8	267.0
22	267.1	266.95	267.3	267.25	267.0	262.85	261.9	266.3	270.3	268.45	267.0	267.1
23	267.25	266.85	267.15	267.3	267.6	262.85	261.8	265.5	271.0	268.1	266.9	267.0
24	266.8	267.05	267.15	267.3	267.2	262.9	261.9	265.0	269.55	267.3	266.85	267.0
25	267.2	267.5	267.1	267.9	267.15	262.9	261.8	264.6	268.4	266.35	266.95	266.75
26	267.15	267.3	267.3	267.2	266.2	262.8	261.8	269.2	267.65	265.4	267.2	267.25
27	267.05	267.05	266.95	267.05	267.55	262.8	261.9	267.7	266.05	264.6	267.15	267.0
28	267.2	267.2	267.15	267.75	266.45	262.7	261.9	267.0	265.05	264.55	267.1	267.05
29	267.1	267.25	267.0	267.45	264.9	262.7	261.9	......	265.65	265.85	267.25	267.1
30	266.95	267.2	267.25	271.25	266.0	262.65	261.9	......	266.35	264.75	267.1	267.05
31	267.0	267.15	......	273.4	......	262.55	261.9	......	266.95	......	267.3	......

This station, established April 3, 1904, is located at the Washington avenue bridge over the Mohawk river between Schenectady and Scotia, commonly known as the Scotia bridge. The original staff gage, secured to the downstream end of the first pier from the east bank, was replaced on April 12, 1917, by a standard Type A gage, No. 139, in the same location, having a range of 24 feet, between elevations 208.0 and 232.0. A standard benchmark plug is set near the gage at elevation 220.0 (B. C. datum).

The gage is read twice daily to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT SCHENECTADY, for the year ended June 30, 1918. Peter Lebeis, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	213.0	211.7	211.95	211.5	215.75	212.0	211.5	211.6	218.6	214.2	212.8	211.95
2.....	213.0	211.6	211.85	211.65	213.85	212.25	211.5	211.6	219.6	214.7	213.0	211.9
3.....	212.4	211.5	211.7	211.7	213.0	212.5	211.5	211.6	218.45	214.85	211.95	211.8
4.....	212.05	211.55	211.6	211.8	212.7	212.1	211.5	211.55	216.95	214.2	212.4	211.75
5.....	211.95	211.8	211.8	211.8	212.2	212.1	211.5	211.5	216.45	213.5	212.4	211.75
6.....	211.75	211.55	211.75	211.7	212.05	212.05	211.5	211.55	216.3	213.15	212.05	211.8
7.....	211.85	211.5	211.65	211.8	212.0	212.0	211.5	211.6	218.35	213.1	212.2	211.75
8.....	211.85	211.6	211.65	211.7	212.25	211.55	211.5	211.6	217.05	213.05	212.2	211.9
9.....	211.75	211.55	211.55	211.7	211.95	211.4	211.5	211.6	216.2	214.3	211.8	211.8
10.....	212.15	212.15	211.6	211.8	212.1	211.5	211.5	211.6	215.8	214.9	211.95	211.9
11.....	212.3	211.8	211.7	211.7	212.0	211.45	211.5	211.6	214.55	214.15	211.95	211.95
12.....	212.45	211.65	211.65	211.7	212.1	211.5	211.5	211.6	214.9	213.75	212.2	212.9
13.....	212.35	211.6	211.7	212.0	211.9	211.5	211.5	211.6	216.9	213.3	212.2	212.8
14.....	212.2	211.75	211.65	211.6	212.0	211.55	211.5	211.75	220.35	213.55	214.05	212.3
15.....	212.3	211.7	211.7	211.85	211.9	211.45	211.5	212.0	218.65	214.5	212.9	211.95
16.....	212.55	211.65	211.75	212.75	211.95	211.5	211.5	213.05	217.65	213.9	212.25	211.95
17.....	212.25	211.6	211.55	212.15	211.8	211.45	211.55	212.3	216.9	213.65	212.55	211.95
18.....	212.05	211.75	211.55	212.15	211.95	211.4	211.6	211.05	220.0	214.5	212.3	211.85
19.....	212.05	211.55	211.7	211.85	211.8	211.45	211.6	[a]	221.0	214.8	212.1	211.7
20.....	212.0	211.55	211.58	212.6	211.9	211.55	211.6	212.5	221.6	214.05	212.1	211.65
21.....	212.1	211.7	211.75	212.65	211.9	211.55	211.6	223.85	222.65	213.5	212.2	211.65
22.....	211.75	211.65	211.55	212.3	211.95	211.6	211.6	219.8	223.75	214.6	212.25	211.9
23.....	211.9	211.55	211.6	212.0	213.0	211.6	211.6	216.0	223.5	214.8	212.1	211.8
24.....	211.75	211.95	211.5	212.35	212.45	211.6	211.6	216.0	218.35	214.1	212.05	211.7
25.....	211.8	212.7	211.55	213.35	212.2	211.65	211.6	216.05	215.65	213.55	212.1	211.85
26.....	211.75	211.85	211.55	212.75	211.75	211.7	211.5	218.2	214.75	213.15	211.9	211.75
27.....	211.7	211.75	211.6	212.4	211.95	211.7	211.5	222.05	213.75	212.45	212.35	211.6
28.....	211.7	211.7	211.65	212.6	212.0	211.7	211.5	219.8	213.2	213.1	212.25	211.7
29.....	211.75	211.8	211.6	212.85	211.8	211.7	211.5	......	213.25	212.5	212.2	211.75
30.....	211.6	211.85	211.75	216.3	211.8	211.7	211.4	......	213.7	212.55	212.1	211.55
31.....	211.7	211.75	......	220.2	......	211.7	211.6	......	214.0	......	212.0	......

[a] No record.

MOHAWK RIVER AT REXFORD

This station, originally established by the United States Deep Waterways Commission December 8, 1898, and now maintained by this Department, is located on the Mohawk river at Rexford

(Aqueduct) about 3.7 miles below the N. Y. C. R. R. bridge at Schenectady. Previous to January 20, 1915, a chain gage was located on the right, or south abutment, a few feet above the crest of the old State dam. Beginning January 20, 1915, a staff gage on the upstream side of the south abutment of the old Erie canal aqueduct 800 feet below the dam was used. On January 24, 1917, this gage was replaced by a standard Type A gage, No. 138, at the same location, having a range of 20 feet, between elevations 210.0 and 230.0 A standard bench-mark plug is set near the gage at elevation 216.0 (B. C. datum).

The old State dam with crest at elevation 209.5 has been entirely removed.

The gage is read twice daily — usually at 8 A. M. and 4 P. M.— to tenths, with occasional readings to half-tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT CANAL AQUEDUCT, REXFORD, for the year ended June 30, 1918. J. Reepmeyer, Jr., Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	212.9	211.7	211.6	211.8	215.2	212.0	211.0	211.0	215.2	213.25	212.2	211.8
2.....	212.45	211.6	211.7	211.6	212.75	212.0	211.0	211.0	213.0	213.6	212.0	211.8
3.....	212.25	211.6	211.6	211.6	212.4	212.0	211.0	211.0	213.0	213.55	211.8	211.75
4.....	212.0	211.6	211.5	211.6	212.0	212.0	211.0	211.0	213.6	213.15	211.9	211.7
5.....	212.0	211.5	211.5	211.65	212.0	212.0	211.0	211.0	213.9	212.75	211.85	211.6
6.....	211.8	211.5	211.5	211.8	212.0	212.0	211.0	211.0	213.72	212.5	211.8	211.4
7.....	211.6	211.5	211.5	212.4	212.0	212.0	211.0	211.0	215.15	212.5	211.8	211.55
8.....	211.5	211.5	211.5	212.2	212.0	212.0	211.0	211.0	215.2	212.45	211.75	211.75
9.....	211.5	211.5	211.5	212.1	212.0	212.0	211.0	211.0	213.7	213.1	211.7	211.7
10.....	211.5	211.5	211.5	212.0	212.0	212.0	211.0	211.0	213.5	213.4	211.7	211.6
11.....	211.5	211.5	211.5	212.0	212.0	212.0	211.0	211.0	212.65	213.15	211.7	211.6
12.....	212.0	211.55	211.5	212.0	212.0	212.0	211.0	211.0	212.95	212.85	211.65	211.9
13.....	212.0	211.6	211.5	212.4	212.0	212.0	211.0	211.0	213.65	212.7	211.6	212.5
14.....	212.5	211.6	211.5	212.4	212.0	212.0	211.0	211.0	216.5	213.15	213.1	212.0
15.....	212.4	211.55	211.5	212.4	212.0	212.0	211.0	211.0	215.4	213.25	212.7	211.9
16.....	212.55	211.55	211.6	212.2	212.0	212.0	211.0	211.0	214.62	213.05	212.15	211.8
17.....	212.3	211.6	211.6	212.2	212.0	212.0	211.0	*a*	214.35	212.95	212.0	211.7
18.....	212.4	211.6	211.6	212.0	212.0	212.0	211.0	*a*	216.2	213.25	212.0	211.65
19.....	212.2	211.5	211.6	212.0	212.0	212.0	211.0	*a*	217.2	213.5	212.0	211.6
20....	211.9	211.5	211.6	212.4	212.0	212.0	211.0	222.0	217.55	213.5	212.0	211.6
21.....	211.85	211.5	211.6	212.4	212.0	212.0	211.0	219.0	218.3	212.9	211.9	211.7
22.....	211.8	211.55	211.6	212.2	212.1	212.0	211.0	*a*	220.2	213.4	211.9	211.6
23.....	211.8	211.6	211.6	212.2	212.25	212.0	211.0	213.5	223.4	213.25	211.9	211.7
24.....	211.7	211.85	211.6	212.2	212.3	212.0	211.0	214.0	216.65	213.0	211.9	211.7
25.....	211.7	212.0	211.6	212.1	212.4	212.0	211.0	214.0	214.3	212.75	211.8	211.7
26.....	211.6	211.6	211.6	212.55	212.4	212.0	211.0	216.65	213.4	212.55	211.6	211.65
27.....	211.6	211.6	211.6	213.4	212.2	212.0	211.0	215.9	212.88	212.4	211.95	211.6
28.....	211.6	211.6	211.6	212.7	212.0	212.0	211.0	215.8	212.6	212.2	211.95	211.6
29.....	211.6	211.6	211.6	212.6	212.0	212.0	211.0	......	212.6	212.2	211.85	211.6
30.....	211.6	211.6	211.7	212.7	212.0	212.0	211.0	......	212.9	212.2	211.9	*a*
31.....	211.8	211.6	......	217.65	......	212.0	211.0	......	*a*	......	211.85	.....

a No record.

This station was established June 24, 1913, by the U. S. Geological Survey and until March 1, 1915, gage heights, or elevations converted from automatic gage records, were published. Since March 1, 1915, a record has been kept by this Department in addition to that of the U. S. Geological Survey. The concrete gage at the upper end of lock No. 7 has been used for this purpose.

The gage is read four times daily during the navigation season and three times daily during the remainder of the year.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER ABOVE VISCHER FERRY DAM, for the year ended June 30, 1918. J. J. Hannan, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	212.58	211.68	211.85	211.62	213.68	211.80	211.60	211.60	212.80	213.00	212.30	211.90
2	212.42	211.72	211.75	211.62	212.92	212.02	211.60	211.60	213.00	213.20	212.67	211.78
3	212.42	211.65	211.75	211.65	212.50	212.08	211.60	211.60	212.80	213.27	212.23	211.72
4	212.08	211.65	211.65	211.62	212.22	212.05	211.60	211.60	212.50	212.90	212.17	211.80
5	211.98	211.70	211.68	211.75	212.08	211.82	211.60	211.60	212.50	212.80	212.07	211.78
6	211.78	211.62	211.65	211.90	212.00	211.98	211.60	211.50	212.47	212.63	211.80	211.75
7	211.78	211.60	211.62	211.72	211.82	211.88	211.60	211.60	212.76	212.57	211.83	211.90
8	211.82	211.62	211.70	211.70	211.90	211.77	211.60	211.60	212.60	212.87	211.97	211.88
9	211.78	211.60	211.55	211.72	211.90	211.43	211.60	211.60	212.50	213.23	211.73	211.85
10	211.90	211.78	211.55	211.80	211.82	211.40	211.60	211.60	212.40	212.23	211.77	211.80
11	211.90	211.78	211.62	211.78	211.72	211.40	211.60	211.60	212.10	212.97	212.07	211.90
12	212.22	211.62	211.65	211.82	211.80	211.50	211.60	211.50	212.20	212.77	211.97	212.15
13	212.15	211.68	211.68	211.72	211.85	211.60	211.60	211.50	212.43	212.63	211.83	212.55
14	212.00	211.72	211.65	211.72	211.78	211.50	211.50	211.60	213.20	212.70	213.00	212.30
15	212.28	211.72	211.58	211.78	211.70	211.50	211.50	211.87	212.83	213.10	212.57	212.00
16	212.48	211.75	211.70	212.18	211.75	211.50	211.50	212.00	212.70	212.90	212.35	211.95
17	211.98	211.62	211.62	212.00	211.75	211.43	211.60	211.73	212.60	212.83	212.05	211.88
18	211.85	211.72	211.62	211.88	211.75	211.43	211.50	210.47	213.17	213.10	211.88	211.85
19	212.00	211.62	211.60	211.78	211.75	211.43	211.50	203.03	213.40	213.23	211.95	211.75
20	211.95	211.60	211.55	212.05	211.75	211.50	211.50	206.98	213.53	212.97	211.78	211.68
21	211.90	211.62	211.65	212.30	211.75	211.63	211.60	213.22	213.80	212.80	212.05	211.70
22	211.80	211.60	211.62	212.20	211.82	211.60	211.60	210.86	213.97	213.10	212.00	211.80
23	211.75	211.62	211.60	211.98	212.28	211.67	211.50	206.43	214.46	213.13	212.05	211.70
24	211.75	211.75	211.60	212.00	212.28	211.70	211.50	204.53	213.88	213.97	211.98	211.75
25	211.70	212.15	211.62	212.45	211.95	211.60	211.50	204.57	213.47	212.77	211.93	211.85
26	211.70	211.88	211.60	212.40	211.82	211.60	211.50	208.03	213.23	212.67	212.05	211.72
27	211.80	211.80	211.65	212.25	211.65	211.60	211.60	213.27	212.80	212.30	212.00	211.75
28	211.72	211.72	211.62	212.10	211.88	211.70	211.60	213.10	212.53	212.30	212.18	211.72
29	211.75	211.80	211.65	212.42	211.72	211.70	211.60	......	212.60	212.23	212.02	211.72
30	211.62	211.72	211.70	213.18	211.70	211.70	211.47	......	212.80	212.20	212.95	211.68
31	211.68	211.78	......	214.95	......	211.60	211.60	......	212.90	......	211.90	......

MOHAWK RIVER BELOW VISCHER FERRY DAM

This station, established May 1, 1916, is located below the Vischer Ferry dam on the Mohawk river and indicates the water-surface at the upstream end of the canalized pool formed by the Crescent dam. The vertical staff concrete gage on the lower navigation season and three times daily during the remainder of the year.

Daily elevation of water-surface (B. C. datum) of Mohawk River below Vischer Ferry Dam, for the year ended June 30, 1918. J. J. Hannan, Observer

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	186.10	184.78	184.88	184.58	187.98	185.15	184.60	184.60	186.60	186.43	185.47	184.95
2	186.60	184.75	184.72	184.58	186.90	185.20	184.60	184.60	186.70	186.70	185.77	184.82
3	185.38	184.68	184.75	184.62	185.85	185.25	184.60	184.60	186.50	186.80	185.33	184.78
4	185.20	184.72	184.65	184.55	185.45	185.30	184.60	184.60	185.97	186.60	185.30	184.78
5	185.12	184.72	184.70	184.62	185.35	185.18	184.60	184.60	185.80	186.13	185.20	184.80
6	184.92	184.62	184.62	184.82	185.35	185.22	184.50	184.60	185.73	185.83	185.03	184.70
7	184.92	184.58	184.58	184.70	185.25	185.10	184.50	184.60	186.20	185.87	185.07	184.82
8	184.92	184.65	184.65	184.65	185.22	184.90	184.50	184.60	186.10	185.70	185.07	185.92
9	184.82	184.65	184.55	184.65	185.22	184.73	184.50	184.60	185.80	186.20	184.83	184.85
10	184.92	184.90	184.60	184.70	184.98	184.50	184.50	184.60	185.60	186.90	185.87	184.82
11	185.20	184.98	184.60	184.80	185.00	184.50	184.50	184.57	185.10	186.60	187.87	185.00
12	185.35	184.70	184.65	184.78	185.08	184.50	184.50	184.50	185.10	186.27	184.97	185.22
13	185.35	184.72	184.70	184.72	185.18	184.50	184.50	184.50	185.50	186.23	185.00	185.68
14	185.10	184.72	184.58	184.80	185.12	184.60	184.50	184.50	187.00	185.97	186.43	185.42
15	185.40	184.85	184.58	184.72	185.02	184.60	184.50	185.13	186.63	186.57	185.93	185.20
16	185.60	184.75	184.60	185.25	185.00	184.60	184.50	184.67	186.23	186.30	185.50	184.95
17	185.08	184.68	184.60	185.08	184.98	184.60	184.60	185.53	186.00	186.20	185.15	184.92
18	185.00	184.72	184.55	184.98	184.95	184.50	184.57	185.40	187.00	186.40	185.03	184.88
19	185.20	184.55	184.52	184.85	184.92	184.53	184.50	185.30	187.40	186.90	185.15	184.88
20	185.15	184.55	184.58	185.18	184.92	184.60	184.50	185.80	187.70	186.47	184.92	184.90
21	184.98	184.60	184.58	185.52	184.98	184.67	184.67	189.10	188.50	186.13	185.02	184.72
22	185.00	184.65	184.62	185.42	184.98	184.60	184.60	186.70	189.00	186.50	185.02	184.78
23	184.90	184.62	184.58	185.08	185.48	184.50	184.50	186.33	190.60	186.87	185.05	184.80
24	185.00	184.72	184.58	185.10	185.62	184.50	184.50	185.80	189.43	186.43	185.02	184.72
25	184.80	185.28	184.58	185.60	185.38	184.60	184.60	185.80	187.80	186.17	184.90	184.78
26	184.82	185.35	184.52	185.82	185.08	184.60	184.60	185.77	187.03	185.83	185.00	184.72
27	184.88	184.80	184.62	185.60	184.90	184.70	184.50	188.03	186.20	185.37	185.08	184.70
28	184.88	184.75	184.65	185.38	184.92	184.60	184.50	186.90	185.80	185.40	185.20	184.70
29	184.68	184.78	184.62	185.72	184.92	184.60	184.50	......	185.83	185.37	185.05	184.75
30	184.58	184.80	184.58	186.52	184.90	184.60	184.60	......	186.13	185.30	185.08	184.65
31	184.72	184.80	......	189.72	......	184.60	184.60	......	186.40	......	184.88	......

MOHAWK RIVER AT VISCHER FERRY DAM

Location.—At the Vischer Ferry dam of the Barge canal (lock No. 7), 1 mile above Stony creek and Vischer Ferry, about 7 miles below Schenectady, Schenectady county, and about 11 miles above the mouth.

Drainage area.— 3,400 square miles. (Measured on U. S. Geological Survey topographic maps.)

Records available.— June 24, 1913, to June 30, 1918.

Gage.— Stevens water-stage recorder (showing head on crest of spillway), in the southerly corner of the basin near upper end of Barge canal lock; installed August 18, 1916.

Inclined staff at foot of an old bridge abutment about 100 feet

May 24 to June 2, 1914.

Staff gage in masonry of outer lock wall, just above upper gates, read March 30 to May 23, 1914, and March 30 to August 17, 1916. Datum of gage 12.1 feet lower than that of recorder.

Gurley water-stage recorder in the northerly (out-stream) corner of the basin, used December 17, 1913, to March 29, 1914, and May 24, 1914, to February 23, 1916.

Water-stage recorders inspected by engineers from the Albany office of the United States Geological Survey. Staff gage read by lock-tenders.

Discharge measurements.— Made by wading below the dam at low water during 1913–14. During the spring of 1915 the Crescent dam (next downstream) was closed, making further measurements impossible. No provision for measurements at medium and high stages.

Channel and control.— The control is the crest of the spillway.

Extremes of discharge.— Current year: Maximum stage from water-stage recorder, 4.00 feet at 7 A. M., October 31; discharge, 50,200 second-feet. Minimum stage from water-stage recorder, 0.29 foot at 6.45 P. M., October 14; discharge, 670 second-feet.

1913–1918: Maximum stage recorded, 7.6 feet just before noon, March 28, 1914, determined by leveling from flood marks; discharge, estimated by New York State Engineer, about 140,000 second-feet. This stage lasted but a few moments and was caused by the breaking of an ice jam near Schenectady. Minimum stage from water-stage recorder, 0.18 foot from 4 A. M. to 5 A. M. and 4 P. M. to 6 P. M., October 31, 1914; discharge, about 290 second-feet.

Diversions.— Water was diverted into Erie canal at temporary lock in north end of dam, prior to December, 1914. Measurements of this diversion were made at bridge 48, about a mile downstream, but no allowance for the diversion was made in computing the flow.

Barge canal lock No. 7, at the south end of dam, was put in operation May 15, 1915. The following tables of discharge include the flow over the spillway and through the lock and water-wheels.

Regulation.— Seasonal distribution of flow regulated by the voir on West Canada creek. Large irregular diurnal fluctuations during low water caused by operation of movable dams upstream.

Accuracy.—Stage-discharge relation permanent. Probably not affected by ice. Rating curve well defined by discharge measurements between 350 and 2,500 second-feet. Above 2,500 second-feet based on theoretic coefficients. Record from water-stage recorder satisfactory for periods when the recorder was in operation. Daily discharge for these periods determined by discharge integration. Results fairly good for periods of low water when the water-stage recorder was in operation. Results fair for other periods.

Coöperation.—Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Daily discharge, in second-feet, of MOHAWK RIVER AT VISCHER FERRY DAM, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	11,400	2,260	3,480	1,200	23,900	3,930	2,360	1,620	14,200	15,580	7,970	2,940
2.....	8,920	2,240	2,960	1,740	14,900	4,810	2,310	1,620	13,700	18,200	9,170	2,790
3.....	7,140	1,420	2,510	1,570	9,830	3,570	2,260	1,580	11,700	18,900	7,610	2,020
4.....	5,780	2,030	1,730	1,740	7,280	4,860	2,210	1,440	11,300	15,700	5,700	2,080
5.....	4,530	2,550	2,520	2,390	5,740	4,780	2,130	1,480	9,330	12,500	5,860	2,020
6.....	3,510	1,330	2,120	2,670	5,120	5,620	2,080	1,920	8,370	10,500	4,770	2,180
7.....	3,720	1,430	2,310	2,800	5,020	3,950	2,020	1,820	10,200	9,790	4,880	2,610
8.....	3,550	1,730	2,040	1,720	5,270	3,390	1,870	1,620	10,300	9,680	5,090	3,480
9.....	3,430	1,930	1,520	1,810	4,470	2,890	1,720	1,530	8,450	15,000	3,610	2,850
10.....	4,590	3,380	2,050	2,130	3,750	2,490	1,620	1,480	7,090	19,600	3,340	3,340
11.....	5,120	3,260	2,020	2,340	3,920	2,340	1,580	1,440	6,160	15,800	4,880	4,620
12.....	7,570	1,850	2,120	1,910	3,740	2,210	1,770	1,340	6,080	13,200	4,880	11,100
13.....	6,350	2,020	2,250	2,680	3,770	2,380	1,530	1,390	7,610	11,400	6,030	8,900
14.....	4,940	2,400	2,220	2,440	3,620	2,330	1,530	1,970	15,200	12,500	14,700	5,670
15.....	6,790	2,830	1,520	3,410	3,410	1,900	1,720	4,460	13,200	16,700	11,100	3,730
16.....	8,020	1,980	2,460	6,380	3,310	1,800	1,620	5,370	8,930	14,600	7,900	3,590
17.....	4,730	2,060	1,600	4,310	2,870	1,950	2,020	5,300	7,010	13,600	5,110	3,440
18.....	4,320	2,390	1,770	4,120	3,220	2,210	1,920	4,860	15,200	16,700	4,540	3,500
19.....	5,330	1,660	2,100	3,290	2,990	2,430	1,620	4,240	20,400	19,200	4,000	2,340
20.....	4,130	1,630	1,360	6,830	3,100	2,430	1,670	10,800	22,100	15,700	3,720	2,150
21.....	4,150	1,720	1,990	8,070	3,230	2,430	2,020	27,600	26,000	12,600	4,920	2,090
22.....	3,350	1,640	1,590	6,490	3,790	2,210	1,670	14,500	28,700	16,800	4,270	3,260
23.....	3,280	1,620	1,510	4,480	8,840	2,240	1,670	10,500	36,000	18,800	4,590	2,770
24.....	2,630	2,590	1,470	5,870	6,680	2,290	1,580	8,370	29,500	15,700	3,560	2,590
25.....	2,430	6,760	1,660	10,200	4,820	2,340	1,770	7,970	22,800	12,700	3,660	3,150
26.....	2,080	4,230	1,440	8,880	2,820	2,390	1,720	9,410	19,900	10,300	2,800	2,520
27.....	2,790	2,780	1,640	6,520	2,470	2,440	1,770	18,800	14,440	7,740	5,120	2,340
28.....	2,350	2,230	1,560	7,120	3,690	2,490	1,970	15,700	11,100	7,010	5,400	2,080
29.....	2,180	6,140	1,490	8,980	2,340	2,490	2,020	......	11,000	6,610	4,470	2,540
30.....	1,700	2,530	1,860	23,200	2,650	2,490	1,670	......	13,400	7,010	3,750	1,580
31.....	2,120	2,790	......	43,900	......	2,440	1,670	......	14,900	......	3,300	......
Mean...	4,610	2,500	1,960	6,170	5,350	2,920	1,840	6,080	14,600	13,700	5,510	3,340

NOTE.—No record, December 5 to March 18, April 23 to May 17 and June 18. Daily discharge from record at Crescent dam inserted for these periods.

June 30, 1918

[Drainage area, 3,430 square miles]

Month	Discharge in Second-feet				Run-off
	Maximum	Minimum	Mean	Per square mile	Depth in 3.430 inches on drainage area
July	11,400	1,700	4,610	1.34	1.54
August	6,760	1,330	2,500	0.729	0.84
September	3,480	1,360	1,960	0.571	0.64
October	43,900	1,200	6,170	1.80	2.08
November	23,900	2,340	5,350	1.56	1.74
December	5,620	1,800	2,920	0.851	0.98
January	2,360	1,530	1,840	0.536	0.62
February	27,600	1,340	6,080	1.77	1.84
March	36,000	6,080	14,600	4.26	4.91
April	19,600	6,610	13,700	4.00	4.46
May	14,700	2,800	5,510	1.61	1.86
June	11,100	1,560	3,340	0.974	1.09
The year	43,900	1,200	*5,720	*1.67	*22.60

*Computed by the State Engineer.

MOHAWK RIVER AT DUNSBACH FERRY

This station, maintained March 12, 1898, to April 1, 1899, by the United States Deep Waterways Commission, was reëstablished August 1, 1900, by the United States Geological Survey in coöperation with this Department and is now maintained by this Department. It is located at the Watervliet pumping station on the right, or south, bank of the Mohawk river at the site of the old Dunsbach Ferry dam, about 3 miles above the old Erie canal aqueduct at the village of Crescent, about 5.6 miles below the new Vischer Ferry dam and about 4.6 miles above the new Crescent dam. Discharge computations were discontinued in 1911 and the old dam was partially removed in August, 1912.

The original gage was a staff in three sections, having a range of 17 feet, the lower two sections, from 2.0 to 9.0, being secured to crib work, and the upper sections, from 9.0 to 19.0, being secured to the wall of the pump-house. Reference points were used from October 22, 1914, to March 6, 1916, when a staff gage was erected. This was replaced on January 16, 1917, by a standard Type A gage, No. 135, secured to the northwest corner of the Watervliet Hydraulic Company's pump-house and having standard bench-mark plug is set near the gage at elevation 190.0 (B. C. datum).

The gage is read twice daily—at 8 A. M. and 4 P. M.—to tenths.

Emendation.— Owing to transposition of figures the elevation of the reference point on the door-sill has been used as 191.12 instead of 191.21. All elevations from October 15, 1912, to March 5, 1916, inclusive, should be 0.09 higher.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT DUNSBACH FERRY, for the year ended June 30, 1918. Robert Wilson, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	185.15	184.75	185.0	184.6	187.15	185.0	184.6	184.6	186.05	186.4	185.45	184.8
2.....	185.2	184.75	184.9	184.65	186.4	185.05	184.6	184.6	186.0	186.4	185.65	184.8
3.....	185.2	184.65	184.85	184.7	185.95	185.1	184.6	184.7	186.0	186.45	185.55	184.8
4.....	185.1	184.6	184.8	184.7	185.55	185.05	184.6	184.7	186.0	186.35	185.3	184.8
5.....	185.1	184.6	184.8	184.75	185.25	184.95	184.6	184.7	186.0	186.45	185.3	184.8
6.....	185.15	184.7	184.7	184.8	185.2	184.9	184.6	184.7	186.0	186.5	185.2	184.8
7.....	185.2	184.75	184.7	184.75	185.2	184.95	184.55	184.7	186.0	186.6	185.15	184.8
8.....	185.1	184.7	184.7	184.7	185.2	185.0	184.5	184.7	186.0	186.65	185.0	184.9
9.....	184.95	184.65	184.8	184.65	185.1	184.9	184.5	184.7	186.0	186.95	184.95	184.9
10.....	184.8	184.6	184.75	184.6	185.05	184.75	184.5	184.7	186.0	186.85	184.9	185.0
11.....	184.85	184.6	184.7	184.7	185.0	184.6	184.5	184.7	186.05	186.55	185.0	185.3
12.....	185.0	184.6	184.8	184.7	185.0	184.5	184.6	184.7	186.15	186.15	185.2	185.75
13.....	185.2	184.6	184.8	184.75	185.0	184.5	184.65	184.7	186.2	185.9	185.55	185.8
14.....	185.1	184.7	184.7	184.9	184.95	184.5	184.7	184.7	186.2	186.05	186.35	185.65
15.....	185.25	184.7	184.7	185.45	184.9	184.5	184.7	184.7	186.2	186.35	185.95	185.45
16.....	185.25	184.6	184.75	185.35	184.8	184.5	184.7	184.7	186.2	186.45	185.5	185.5
17.....	185.15	184.65	184.8	185.05	184.8	184.45	184.6	184.7	186.35	186.5	185.2	185.65
18.....	185.05	184.7	184.7	184.75	184.8	184.4	184.6	184.7	186.4	186.4	185.05	185.7
19.....	184.95	184.8	184.7	184.7	184.8	184.4	184.6	185.0	186.75	186.4	185.0	185.6
20.....	184.8	184.9	184.7	184.75	184.8	184.55	184.6	185.0	187.1	186.4	185.0	185.6
21.....	184.8	184.8	184.8	184.8	184.9	184.6	184.6	187.9	187.35	186.3	185.1	185.75
22.....	184.75	184.95	184.8	184.95	184.95	184.6	184.6	187.15	187.75	186.2	185.0	186.05
23.....	184.7	185.35	184.7	185.1	185.2	184.6	184.6	186.35	188.25	186.0	185.0	186.1
24.....	184.6	185.6	184.7	186.1	185.3	184.6	184.5	186.0	187.85	185.95	185.0	186.0
25.....	184.6	185.6	184.65	185.7	185.25	184.6	184.5	186.0	187.3	185.65	184.9	185.95
26.....	184.55	185.35	184.6	185.5	185.2	184.6	184.5	186.2	186.7	185.4	185.0	185.9
27.....	184.5	184.9	184.65	185.5	185.1	184.6	184.55	186.85	186.1	185.25	185.0	185.8
28.....	184.5	184.8	184.65	185.4	185.05	184.6	184.6	186.3	185.75	185.2	184.9	185.8
29.....	184.5	184.8	184.6	185.5	185.0	184.6	184.6	......	185.75	185.1	184.9	185.8
30.....	184.6	184.9	184.6	186.6	185.0	184.6	184.6	......	186.05	185.3	184.8	185.7
31.....	184.7	185.0	......	188.7	......	184.6	184.55	......	186.3	......	184.8	......

MOHAWK RIVER ABOVE CRESCENT DAM, NEAR COHOES

This station, established October 22, 1916, is located above Crescent dam, in the guard-gate by-pass at the entrance to the land-line between Crescent dam and Waterford. The gage, No. 134, is a standard Type A gage, secured to the north side of the pier between the guard-gate and by-pass just above the Taintor gate, and has a range of 12 feet, between elevations 182.0 and 194.0.

The gage is read twice daily, usually to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER ABOVE CRESCENT DAM, NEAR COHOES, for the year ended June 30, 1918. W. S. Stubbs and R. G. Yaxley, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1....	185.95	184.65	184.8	184.6	187.45	184.95	184.7	184.4	185.8	186.2	185.5	184.95
2....	185.45	184.75	184.7	184.6	186.5	185.15	184.5	184.4	185.9	186.4	185.6	184.9
3....	185.25	184.6	184.8	184.6	185.75	185.2	184.5	184.4	185.9	186.4	185.6	184.85
4....	185.2	184.65	184.55	184.7	185.45	185.3	184.4	184.4	185.5	186.4	185.3	184.85
5....	185.0	184.6	184.7	184.8	185.3	185.1	184.4	184.4	185.4	186.0	185.3	184.85
6....	184.9	184.65	184.6	184.95	185.25	185.1	184.4	184.4	185.35	185.4	185.3	184.8
7....	184.9	184.5	184.6	184.75	185.2	184.95	184.4	184.4	185.45	*a*	185.2	184.8
8....	184.9	184.6	184.7	184.65	185.2	184.9	184.4	184.4	185.4	185.7	185.2	184.95
9....	184.95	184.55	184.5	184.6	185.2	184.55	184.4	184.4	185.4	185.7	185.0	184.85
10....	184.95	184.65	184.6	184.7	184.95	184.4	184.4	184.4	185.5	186.6	184.8	184.8
11....	184.95	184.65	184.6	184.8	184.95	184.4	184.4	184.4	185.5	186.4	185.2	184.95
12....	185.35	184.6	184.6	184.8	184.9	184.4	184.4	184.4	185.5	186.1	185.0	185.9
13....	185.2	184.6	184.65	184.8	185.0	184.5	184.5	184.4	185.5	186.2	185.1	185.7
14....	185.1	184.7	184.65	184.8	185.0	184.65	184.45	184.4	186.0	185.9	186.4	185.4
15....	185.35	184.6	184.55	184.95	185.0	185.0	184.4	184.4	186.0	186.3	185.8	185.15
16....	185.35	184.65	184.65	185.4	185.0	*185.0	184.4	185.35	185.7	186.2	185.6	184.95
17....	185.3	184.65	184.7	185.0	185.0	*185.0	184.4	185.2	186.0	186.1	185.1	184.85
18....	184.95	184.75	184.7	184.85	185.0	*184.55	184.4	184.95	186.0	186.1	185.05	184.85
19....	184.95	184.6	184.7	184.9	184.95	184.7	184.4	185.0	186.1	186.6	185.1	184.7
20....	184.9	184.6	184.65	184.9	184.95	185.0	184.4	185.5	186.5	186.4	184.95	184.65
21....	184.95	184.55	184.55	185.45	184.9	184.9	184.4	186.8	187.1	186.0	185.1	184.65
22....	185.05	184.6	184.55	185.4	184.9	184.75	184.4	186.2	187.25	186.1	185.05	184.9
23....	184.85	184.5	184.3	185.1	185.3	184.7	184.4	185.5	188.0	186.7	185.05	184.75
24....	184.9	184.7	184.5	185.0	185.6	184.7	184.4	185.35	187.6	186.4	185.0	184.7
25....	184.65	185.35	184.55	185.65	185.45	184.7	184.4	185.3	186.9	186.1	184.95	184.75
26....	184.7	185.2	184.55	185.85	185.15	184.7	184.4	185.55	186.7	185.8	184.9	184.65
27....	184.8	185.0	184.6	185.4	182.95	184.7	184.4	186.3	186.7	185.4	185.15	184.7
28....	184.6	184.75	184.55	185.4	185.0	184.7	184.4	186.15	185.8	185.4	185.4	184.6
29....	184.7	184.85	184.5	185.55	184.9	184.7	184.4	......	185.7	185.3	185.1	184.7
30....	184.6	184.8	184.55	186.4	184.8	184.7	184.4	......	186.0	185.4	185.05	184.65
31....	184.7	184.75	......	188.4	......	184.7	184.4	......	*a*	......	185.0	......

* Approximate only. *a* No record.

MOHAWK RIVER BELOW CRESCENT DAM, NEAR COHOES

This station, established October 22, 1916, is located below Crescent dam, at the power-house. The gage, No. 133, is a standard Type A gage, secured to the southwest corner of the power-house, and has a range of 16 feet, between elevations 157.0 and 173.0.

The gage is read twice daily to tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER BELOW CRESCENT DAM, NEAR COHOES, for the year ended June 30, 1918. W. S. Stubbs and R. G. Yaxley, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1....	158.75	157.4	157.55	156.45	160.35	157.3	157.3	156.56	159.35	159.0	158.2	157.75
2....	158.15	157.5	157.6	156.6	159.35	157.8	157.0	156.6	159.35	159.2	158.4	157.7
3....	157.95	156.15	157.6	157.15	158.45	157.8	157.0	156.6	159.1	159.4	158.3	157.4
4....	157.95	157.35	155.65	157.25	158.2	158.0	157.0	156.85	157.75	159.0	157.9	157.4
5....	157.55	157.35	157.05	157.3	157.95	157.65	156.8	156.85	158.4	159.0	158.1	157.45
6....	157.45	155.75	157.15	157.55	158.4	157.8	157.05	156.65	158.65	159.0	157.9	157.5
7....	157.55	156.25	156.35	157.55	157.8	157.5	157.2	156.9	158.75	*a*	157.8	157.45
8....	157.55	156.85	157.5	157.25	157.8	157.5	157.1	156.8	158.9	158.3	157.8	157.6
9....	157.6	156.95	157.45	157.3	157.7	157.05	156.0	157.0	158.5	158.5	157.6	157.55
10....	157.55	157.05	157.35	157.45	157.65	156.05	156.75	157.35	158.9	159.4	157.3	157.5
11....	157.6	157.3	155.95	157.45	157.65	156.0	156.75	157.15	158.0	159.3	157.8	157.6
12....	158.05	157.4	157.15	*a*	157.55	156.8	156.5	156.35	157.8	159.0	157.8	158.2
13....	157.8	157.2	157.6	157.45	157.6	157.15	157.0	155.85	158.1	159.0	157.7	158.45
14....	157.85	157.2	156.45	157.55	157.5	157.4	156.35	156.3	159.8	158.7	159.0	158.25
15....	158.2	157.1	157.35	157.5	157.6	157.75	156.75	157.15	159.4	159.0	158.5	157.85
16....	158.1	157.25	157.5	157.95	157.6	*157.6	156.75	158.35	158.0	159.0	158.3	157.75
17....	157.85	157.15	156.15	157.65	157.55	*157.5	156.8	157.35	159.0	158.8	157.8	157.65
18....	157.4	157.45	156.25	157.55	157.75	*156.65	156.45	157.15	159.2	158.8	157.75	157.65
19....	157.45	157.45	157.35	157.5	157.55	157.1	156.75	156.35	159.5	159.5	157.8	157.55
20....	157.4	156.9	155.45	157.55	157.5	157.45	156.9	158.5	159.4	159.0	157.6	156.85
21....	157.5	157.25	157.1	158.35	157.45	157.35	156.9	159.8	159.8	158.8	157.8	156.4
22....	157.75	157.0	157.3	158.15	157.5	157.2	156.8	159.0	160.2	158.8	157.75	157.6
23....	157.55	156.1	157.45	157.65	157.9	157.2	156.7	157.3	160.75	159.4	157.65	157.5
24....	157.35	157.35	155.5	157.65	158.3	157.15	156.8	157.65	160.2	159.0	157.7	157.35
25....	157.15	158.05	156.85	158.0	158.3	157.2	156.75	158.2	159.5	158.7	157.6	157.5
26....	157.15	157.95	156.4	158.6	157.7	157.2	157.0	158.45	159.3	158.5	157.7	157.45
27....	157.35	157.7	157.15	158.4	157.35	157.1	157.4	159.9	159.0	158.0	157.9	157.45
28....	157.2	157.45	157.1	158.2	157.55	157.3	157.45	159.65	158.5	158.3	158.0	157.25
29....	157.55	157.5	157.35	158.25	157.5	157.1	156.75	......	158.5	157.9	157.85	157.45
30....	156.75	157.45	157.55	159.2	157.5	157.3	156.45	......	158.7	158.0	157.7	157.35
31....	157.3	157.45	......	161.15	......	157.3	156.7	......	*a*	......	157.85	......

* Approximate only. *a* No record.

MOHAWK RIVER AT CRESCENT DAM

Location.— At the Crescent dam of the Barge canal, about 3 miles above the mouth of the river at Cohoes.

Drainage area.— 3,490 square miles. (Measured on U. S. Geological Survey topographic maps by State Engineer's Department.)

Records available.— December 1, 1917, to June 30, 1918.

Gage.— Gurley 7-day water-stage recorder on left bank, about 50 feet above guard-gate at head of Waterford series of locks. It is about 200 yards from left end of spillway. Inspected by operator from Barge canal power-house at the dam.

Determination of discharge.— The rating curve for the spillway has been computed from discharge determined from records at through the locks and water-wheels determined from records of operation of the locks.

Regulation.— Seasonal distribution of flow regulated by the Delta reservoir on the upper Mohawk and by Hinckley reservoir on West Canada creek. Large irregular diurnal fluctuations during low water caused by operation of movable dams upstream.

Accuracy.— Stage-discharge relation permanent. Probably not affected by ice. Since rating is based on computation only, its accuracy is indeterminate. Record from water-stage recorder satisfactory. Results probably fairly good for periods of low water and fair for other periods.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Engineer and Surveyor. Recorder inspected by an employee of the State Superintendent of Public Works.

Daily discharge, in second-feet, of MOHAWK RIVER AT CRESCENT DAM, for the year ended June 30, 1918

DAY	Dec.	Jan.	Feb.	Mar.	April	May	June
1	4,020	2,360	1,620	14,200	15,700	7,970	4,020
2	5,410	2,310	1,620	13,700	17,700	9,170	3,640
3	5,670	2,260	1,580	11,700	18,800	7,610	3,030
4	4,980	2,210	1,440	11,300	16,700	5,700	2,970
5	4,780	2,130	1,480	9,330	13,200	5,860	2,880
6	5,620	2,080	1,920	8,370	11,100	4,770	2,900
7	3,950	2,020	1,820	10,200	10,300	4,880	3,240
8	3,390	1,870	1,620	10,300	10,200	5,090	4,020
9	2,890	1,720	1,530	8,450	14,100	3,610	3,110
10	2,490	1,620	1,480	7,090	20,500	3,340	3,520
11	2,340	1,580	1,440	6,160	16,700	4,880	4,060
12	2,210	1,770	1,340	6,080	14,200	4,880	6,760
13	2,380	1,530	1,390	7,610	12,000	6,030	9,880
14	2,330	1,530	1,970	15,200	11,500	14,700	7,800
15	1,900	1,720	4,460	13,200	15,200	11,100	5,040
16	1,800	1,620	5,370	8,930	14,200	7,900	3,990
17	1,950	2,020	5,300	7,010	13,200	5,110	3,630
18	2,210	1,920	4,880	15,200	15,200	4,840	3,500
19	2,430	1,620	4,240	19,900	18,800	4,190	2,700
20	2,480	1,670	10,800	21,500	15,700	3,820	2,290
21	2,430	2,020	27,600	25,500	12,500	4,970	2,580
22	2,210	1,670	14,500	27,900	15,100	4,420	3,350
23	2,240	1,670	10,500	35,500	18,800	4,690	3,110
24	2,290	1,580	8,370	31,600	15,700	3,880	2,740
25	2,340	1,770	7,970	23,700	12,700	3,840	3,380
26	2,390	1,720	9,410	19,300	10,300	3,500	2,600
27	2,440	1,770	18,800	14,700	7,740	4,770	2,570
28	2,490	1,970	15,700	11,100	7,010	6,020	2,060
29	2,490	2,020	......	10,300	6,610	5,040	2,340
30	2,490	1,670	......	12,700	7,010	4,490	1,790
31	2,440	1,670	......	14,700	......	3,900	......
Mean	2,950	1,840	6,080	14,600	13,600	5,640	3,650

Monthly discharge of MOHAWK RIVER AT CRESCENT DAM, for the year ended June 30, 1918

[Drainage area, 3,490 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
December	5,670	1,800	2,950	0.845	0.97
January	2,360	1,530	1,840	0.527	0.61
February	27,600	1,340	6,080	1.74	1.81
March	35,500	6,080	14,600	4.18	4.82
April	20,500	6,610	13,600	3,90	4.35
May	14,700	3,340	5,640	1,62	1.87
June	9,880	1,790	3,650	1,05	1.17

MOHAWK RIVER ABOVE DAM, COHOES

This station, established December, 1903, in coöperation with the United States Weather Bureau, but now maintained by this Department, is located above the power dam of the Cohoes Company across the Mohawk river at Cohoes. The pool above this dam extends three-quarters of a mile to the new Crescent dam. The dam has a fixed concrete crest 1,278 feet and 2 inches long at about elevation 157.0, on which flash-boards 3 feet high are maintained during low stages. There is also a 24-foot spillway in the gate-house. Owing to the irregular use of water for power purposes the surface above the dam fluctuates as much as 7 or 8 feet during twenty-four hours.

In October, 1916, a standard Type A gage, No. 132, in two sections, was erected on the breakwater to replace the old gage. The lower section has a range of 8 feet, between elevations 154.0 and 162.0, and the upper section has a range of 4 feet, between elevations 162.0 and 166.0. Standard bench-mark plugs are placed near the gages, for the lower section at elevation 161.0 (B. C. datum) and for the upper section at elevation 163.0 (B. C. datum).

The gage is read twice daily — morning and afternoon — to tenths.

COHOES, for the year ended June 30, 1918. James Murphy, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	158.75	157.4	157.6	156.25	159.65	157.85	157.3	156.25	158.9	159.0	158.25	157.7
2.....	158.35	157.45	157.75	157.3	158.85	157.9	156.25	157.25	158.2	159.15	158.35	157.7
3.....	158.1	157.25	157.6	157.25	158.45	157.75	156.5	157.3	158.6	159.25	158.2	157.55
4.....	157.95	157.2	155.3	157.35	158.25	157.85	156.55	156.1	158.8	159.15	158.2	157.55
5.....	157.8	157.3	157.4	157.5	157.95	157.7	157.3	156.15	158.4	158.5	158.0	157.5
6.....	157.6	155.7	157.35	157.55	157.8	157.9	157.4	156.2	158.3	158.8	158.0	157.4
7.....	157.65	156.6	157.35	157.55	157.95	157.65	156.4	156.2	158.3	158.5	157.9	157.55
8.....	157.65	156.75	157.35	157.5	157.95	157.45	156.25	156.1	158.75	158.45	158.0	157.8
9.....	157.55	157.25	157.3	157.35	157.9	157.3	156.3	156.7	158.4	158.75	157.65	157.65
10.....	157.7	157.4	157.35	157.45	157.85	155.8	156.2	157.25	158.25	159.25	157.6	157.75
11.....	157.75	157.35	155.65	157.5	157.8	156.3	156.65	156.25	158.15	159.0	157.75	157.7
12.....	158.1	157.35	157.3	157.35	157.4	157.3	157.4	156.0	158.0	158.8	157.85	158.1
13.....	157.95	157.35	157.25	157.5	157.7	157.2	157.4	156.2	158.3	158.4	158.0	158.3
14.....	158.0	157.4	157.35	157.75	157.7	157.35	156.35	156.5	159.45	158.65	159.0	158.1
15.....	158.2	157.35	157.25	157.7	157.65	157.3	156.4	157.85	159.35	158.95	158.5	157.65
16.....	158.05	157.4	157.45	158.0	157.65	157.25	156.45	158.25	158.95	158.85	158.3	157.8
17.....	157.75	157.35	155.9	157.7	157.6	156.7	156.6	158.2	158.3	158.8	157.8	157.55
18.....	157.9	157.35	156.5	157.6	157.75	156.75	156.1	158.15	159.0	158.95	157.6	157.55
19.....	157.85	157.35	157.4	157.65	157.6	157.1	157.1	158.1	159.4	159.25	158.25	157.6
20.....	157.75	157.35	155.35	158.0	157.6	157.4	157.35	158.6	159.55	159.1	157.1	157.25
21.....	157.7	157.3	157.25	158.3	157.65	157.35	156.4	160.05	159.8	158.8	157.8	157.0
22.....	157.9	156.7	157.15	158.1	157.6	157.4	156.2	159.05	160.0	158.75	157.8	157.55
23.....	157.5	156.2	157.45	157.75	158.2	157.4	156.15	158.5	160.5	159.3	157.8	157.65
24.....	157.45	157.45	155.35	157.85	158.35	157.4	156.15	158.35	160.25	159.15	157.7	157.45
25.....	157.25	157.85	157.15	158.3	158.25	157.4	156.2	158.35	159.8	158.55	157.55	157.6
26.....	157.3	158.05	155.95	158.45	157.6	157.35	157.2	158.55	159.35	158.5	157.65	157.45
27.....	157.55	157.6	157.25	158.3	157.5	157.4	157.35	159.4	158.95	158,25	157.85	157.45
28.....	157.45	157.5	157.05	158.25	157.7	157.4	156.35	159.45	158.5	158.2	158.0	157.35
29.....	157.5	157.5	157.25	158.4	157.4	157.35	156.3	......	158.5	158.1	157.9	157.45
30.....	156.5	157.65	157.4	159.15	157.55	157.3	155.95	......	158.95	158.1	157.8	157.35
31.....	157.3	157.55	......	160.55	......	157.3	156.3	......	158.95	......	157.75	......

MOHAWK RIVER AT WATERFORD

This station, established January 15, 1907, is located at Waterford on the most northerly branch of the Mohawk river and indicates its water-surface about 1,000 feet above its entrance to the Hudson river. As most of the flow of the Mohawk passes through the other branches, this gage also indicates closely the surface of the Hudson river at this locality, which is about 2⅓ miles above the new Federal dam at Troy.

Previous to July, 1913, the gage had been located at old lock in Waterford side-cut, at the wooden bridge across the Hudson at Waterford, and on the coffer-dam below lock No. 2. On July 11, 1913, the gage was located on the north side of the timber crib approach wall to lock No. 2. On October 17, 1916, this was replaced by a standard Type A gage, No. 131, secured to the north side of the north lower concrete approach wall to lock No. 2 and having a range of 16 feet, in two sections. The lower section is between elevations 16.0 and 24.0 and the upper section between elevations 24.0 and 32.0. Standard bench-mark plugs are set, one near the lower section at elevation 23.0 (B. C. datum) and another near the upper section at elevation 28.0 (B. C. datum).

The gage is read twice daily — at 7 or 8 A. M. and 4 or 5 P. M. — to half-tenths.

Daily elevation of water-surface (B. C. datum) of MOHAWK RIVER AT WATERFORD, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	19.55	17.15	17.65	16.78	21.75	17.75	16.90	16.90	21.25	21.22	19.25	18.30
2.....	20.95	17.00	17.25	16.75	20.68	18.02	17.00	16.85	21.30	21.78	20.00	17.95
3.....	21.65	16.65	17.05	16.90	19.88	17.92	17.00	16.75	18.95	22.40	19.30	18.00
4.....	21.15	16.70	16.85	17.16	19.18	18.12	17.00	16.85	19.15	22.28	19.60	17.85
5.....	20.45	16.95	17.50	16.98	18.98	17.82	16.90	16.70	19.45	21.80	18.90	17.85
6.....	20.05	16.75	17.45	17.38	18.90	17.92	16.80	16.85	19.65	21.20	18.85	17.65
7.....	19.80	16.55	17.20	17.22	18.60	17.65	16.90	16.90	19.75	20.68	18.65	17.60
8.....	18.75	16.70	17.05	17.15	18.48	17.42	16.85	16.80	19.55	20.65	18.65	17.85
9.....	18.25	16.85	17.05	17.08	18.42	17.20	16.90	16.85	19.45	21.58	18.65	17.85
10.....	17.95	17.10	16.95	17.05	18.08	17.08	16.95	16.35	19.35	21.85	18.70	17.65
11.....	17.95	17.70	16.90	17.20	17.90	16.82	16.82	16.80	19.55	21.35	18.60	18.20
12.....	17.70	17.60	16.82	16.98	17.82	16.95	16.95	16.75	19.35	20.92	18.65	18.10
13.....	17.70	17.00	16.80	17.00	18.10	17.08	*a*	16.75	19.45	20.52	19.25	18.85
14.....	17.50	17.10	16.78	17.25	17.88	17.18	*a*	16.85	20.40	20.20	19.35	18.92
15.....	18.05	17.30	16.80	17.42	17.85	17.20	*a*	17.85	19.75	20.35	19.65	18.50
16.....	18.32	17.25	16.72	18.12	17.72	16.95	*a*	18.80	19.65	20.98	19.90	18.42
17.....	18.60	17.10	16.62	17.75	17.70	17.05	*a*	18.25	19.65	21.22	19.65	18.00
18.....	18.50	17.30	16.62	17.62	17.70	17.12	*a*	18.15	20.20	21.20	19.55	18.10
19.....	18.40	17.35	16.62	17.60	17.62	17.15	*a*	18.55	21.05	21.30	18.65	17.82
20.....	18.15	16.90	16.68	17.82	17.78	17.60	16.75	20.10	21.85	21.25	18.60	17.60
21.....	18.05	16.85	16.80	18.12	17.72	17.35	16.90	22.45	21.45	20.15	18.70	17.35
22.....	17.95	16.90	16.85	17.90	17.70	17.50	16.85	20.50	21.85	21.18	18.50	17.42
23.....	17.80	16.75	16.80	18.02	18.48	16.90	16.95	19.80	22.40	21.35	18.55	17.50
24.....	17.65	17.00	16.75	17.85	18.62	17.10	16.90	19.75	21.70	21.42	18.60	17.50
25.....	17.50	17.50	16.75	18.42	18.10	17.10	16.80	19.50	20.60	20.10	17.90	17.82
26.....	17.40	17.60	16.75	18.52	17.90	17.30	16.85	20.30	21.45	20.40	17.85	17.60
27.....	17.25	17.20	16.82	18.65	17.78	17.20	16.85	22.25	20.60	19.75	18.10	17.60
28.....	17.10	17.45	16.85	18.25	17.68	17.30	16.75	21.35	20.40	19.45	18.35	17.65
29.....	17.35	17.40	16.82	18.78	17.58	17.20	17.05	......	20.35	19.25	18.30	17.40
30.....	16.95	17.25	16.75	17.95	17.48	17.20	16.55	......	20.55	19.20	18.35	17.45
31.....	17.15	17.10	......	23.68	......	16.90	16.85	......	20.85	......	18.20	......

a No record.

NINE-MILE CREEK

DESCRIPTION

Nine-Mile creek drains a large portion of the territory on the north side of the Mohawk between Utica and Rome, emptying into the latter stream near Oriskany.

Water for the supply of the Rome summit level of the Barge canal will be diverted from West Canada creek above the Morgan dam at Trenton Falls through the Nine-Mile feeder to this stream, thence to the canal, which it enters three miles east of the main spillway for the Mohawk river and the east summit level guard-gate. Nine-Mile creek leaves the canal opposite its entrance over a concrete spillway with rounded crest 700 feet long at elevation 420.0, the canal pool. At the west end of the spillway there is a Taintor gate 24 feet long with sill at elevation 408.0.

NINE-MILE CREEK NEAR STITTVILLE

Location.— At a highway bridge over Nine-Mile creek, known as Powell's bridge, about 1¾ miles below the village of Stittville and about 3 miles from the village of Marcy.

Drainage area.— 59 square miles.

Records available.— Water-surface elevations, November 4, 1905, to June 30, 1918; discharge, January 1, 1907, to June 30, 1917. A gaging station was maintained at this point by the United States Deep Waterways Commission during its survey in 1898.

Gage.— A standard chain gage attached to the downstream side of the bridge is read to tenths twice daily.

Discharge computations.— New rating curve used, beginning October 1, 1915. Due to the failure of the bridge abutment on June 3, 1916, the channel is partly obstructed and a new rating curve will be necessary. Sufficient measurements to establish this curve have not yet been made.

Control.— Rock. The channel is of uniform section and straight for several hundred feet above and below bridge.

Extremes of discharge.— Extremes for current year are not available.

1907–1917: Maximum recorded discharge, October 8, 1907, at 7 A. M., elevation 489.4; estimated discharge, 6,000 second-

1916, elevation, 483.7; discharge, 4 second-feet.

Winter flow.— Discharge relation seriously affected by ice.

Discharge measurements of Nine-Mile Creek at Stittville, during the year ended June 30, 1918

Date	Made by	Elevation of water-surface	Discharge
1917		*Feet*	*Sec.-ft*
December 28...	M. W. Grimes and J. Labishiner..................	484.66	*30.1
1918			
March 9.......	M. P. F. Scully and J. Labishiner................	484.32	†127
April 18.......	M. W. Grimes..................................	484.95	351

* Measurement made under complete ice cover.
† Measurement made under partial ice cover.

Daily elevation of water-surface (B. C. datum) of Nine-Mile Creek near Stittville, for the year ended June 30, 1918. Mrs. Maria Powell and Mrs. Geo. Powell, Observers

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	......	......	483.76	483.96	484.61	483.51	......	......	......	485.06	484.51	484.11
2.....	......	......	483.71	483.71	484.46	483.51	......	......	......	485.16	484.31	484.11
3.....	......	......	483.66	483.66	483.61	483.51	......	......	......	484.46	484.21	484.01
4.....	......	......	483.61	483.76	483.61	483.51	......	......	......	484.36	483.96	484.01
5.....	......	......	483.61	483.76	483.51	483.51	......	......	......	484.11	483.91	484.11
6.....	......	......	483.66	483.71	483.51	483.51	......	......	......	484.31	483.91	484.06
7.....	......	......	483.66	483.66	483.46	483.51	......	......	......	484.06	483.86	484.16
8.....	......	......	483.56	483.66	483.46	483.51	......	......	......	484.81	484.21	483.96
9.....	......	......	483.61	484.61	483.56	483.51	......	......	484.31	485.06	484.06	484.06
10.....	......	......	483.61	484.56	483.51	483.51	......	......	484.11	484.46	484.06	484.41
11.....	......	483.71	483.61	484.61	483.51	483.51	......	......	484.16	484.36	483.96	484.16
12.....	......	483.81	483.66	484.61	483.61	483.51	......	......	484.26	484.21	483.81	485.66
13.....	......	483.81	483.66	484.66	483.61	483.51	......	......	484.41	484.66	484.71	484.66
14.....	......	483.96	483.56	484.66	483.66	483.51	......	......	484.76	484.46	484.66	484.26
15.....	......	483.96	483.56	484.71	483.66	483.51	......	......	484.61	484.26	483.71	484.11
16.....	......	484.21	483.61	484.76	483.61	483.51	......	......	484.66	484.01	484.01	484.06
17.....	......	484.01	483.66	484.66	483.51	483.51	......	......	484.71	483.91	483.81	484.01
18.....	......	484.46	483.61	484.76	483.56	483.51	......	......	485.26	484.76	483.66	484.11
19.....	......	484.46	483.61	484.76	483.61	483.51	......	......	485.36	484.21	483.91	483.96
20.....	......	484.46	483.66	484.71	483.51	483.51	......	......	485.86	483.96	483.91	483.96
21.....	......	484.61	483.61	484.61	483.51	483.51	......	......	486.46	484.16	484.51	484.01
22.....	......	484.81	483.61	484.66	483.51	483.51	......	......	486.56	484.91	484.06	484.46
23.....	......	484.61	483.61	484.66	483.51	483.51	......	......	485.96	484.41	484.26	484.26
24.....	......	484.46	483.61	484.71	483.51	483.51	......	......	485.16	484.11	484.16	484.21
25.....	......	484.41	483.61	484.76	483.51	483.51	......	......	485.46	483.91	483.96	484.21
26.....	......	483.61	483.61	484.71	483.51	483.51	......	......	484.96	484.01	483.96	484.3
27.....	......	483.61	483.61	484.76	483.46	483.51	......	......	484.26	484.11	484.36	484.26
28.....	......	483.81	483.61	484.76	483.51	483.51	......	......	484.61	483.76	484.21	484.31
29.....	......	483.96	483.66	484.86	483.51	483.51	......	......	484.96	483.71	484.21	484.31
30.....	......	484.06	483.51	484.96	483.56	483.51	......	......	485.21	483.91	484.36	484.41
31.....	......	483.86	......	484.76	......	483.51	......	......	484.91	......	484.16	......

Note.— July 1 to August 10, gage out of position, due to settlement of bridge. January 1 to March 8, no record.

DESCRIPTION OF BASIN

West Canada creek rises in West Canada lake, in southwest-central Hamilton county, and flows southwestward, then southeastward into the Mohawk at Herkimer. The drainage area, approximately 584 square miles, is shown on the Utica, Little Falls, Remsen, Wilmurt, Old Forge and West Canada Lakes sheets, United States Geological Survey topographic maps.

There are about fifty small lakes and a few undrained ponds in the watershed of the stream. Most of these are situated near the headwaters, the largest single water-surface, exclusive of the Hinckley reservoir, being Honnedaga lake, 1.4 square miles in extent. There is also a small amount of controllable storage in reservoirs formed by three dams. Swamps and marshes are numerous in the region of the headwaters, usually adjoining lakes and tributaries and having an extent of one-half square mile or less each. At Trenton Falls there is an important plant of the Utica Gas & Electric Co.

Much of the region above the Hinckley reservoir is timber-covered. There are extensive sand areas in the central and upper drainage basins. The soil of the upper watershed is underlaid by granitic gneiss usually at or near the surface, excepting in alluvial valleys. From a point just above Twin Rock bridge (now submerged by the Hinckley reservoir) and extending downstream beyond Trenton Falls the underlying geological formation is Trenton limestone.

Compacted snow accumulates in the woodlands in winter, often to a depth of three or four feet, representing an inch of water for each five or six inches of snow. This melts slowly, feeding the stream in March and April, which months may show a run-off greatly exceeding the precipitation.

At Hinckley the State constructed and put in operation in January, 1915, a storage reservoir of 3,445,000,000 cubic fe capacity for the supply of the Rome summit level of the Bar canal. The stored water is passed down West Canada creek a portion of it is diverted by a new dam on the site of the Morgan dam at Trenton Falls, through a feeder canal and Mile creek to the Barge canal.

For table of drainage areas of West Canada Creek, see pa

Regulation.— By new Barge canal storage reservoir at Hinckley, capacity 3,445,000,000 cubic feet, about 4 miles upstream. Small amounts of water were impounded during construction as early as April, 1914, but this reservoir was first used for regulative purposes in January, 1915. There are several small reservoirs farther up the stream.

Accuracy.— The kilowatts used in estimating the flow through the wheels is the total developed during 24 hours. The pondage is very limited and the surface fluctuates often as much as 10 feet during 24 hours in the low-water season. In connection with the calculated discharge at Trenton Falls it may be stated that there are a variety of conditions which tend to limit the accuracy obtainable.

Coöperation.—Maintained in coöperation with the United States Weather Bureau.

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	2,290	318	420	275	4,830	1,070	463	331	1,130	1,120	1,890	412
2.....	1,260	315	95	282	2,660	1,040	403	330	1,120	950	1,960	367
3.....	903	321	280	281	1,850	939	431	568	1,140	993	1,770	339
4.....	597	313	265	295	1,620	489	541	298	1,010	991	1,470	344
5.....	477	230	296	304	1,360	490	462	317	1,030	992	1,200	327
6.....	407	312	309	297	1,480	489	372	330	1,020	981	980	327
7.....	372	331	342	186	1,420	489	323	330	877	1,100	896	327
8.....	287	329	341	297	1,430	488	333	322	944	977	375	305
9.....	383	380	276	308	1,430	445	333	318	926	992	497	335
10.....	372	484	360	304	1,370	445	333	458	875	991	498	367
11.....	359	467	320	306	1,190	461	333	280	886	990	590	417
12.....	343	569	381	305	1,280	461	329	306	906	950	791	424
13.....	311	495	363	308	1,370	460	267	330	904	897	789	885
14.....	306	486	343	280	1,370	401	328	324	902	977	1,620	943
15.....	203	507	356	293	1,370	384	1,370	325	905	895	1,620	847
16.....	309	452	194	308	1,370	581	347	323	848	1,050	1,200	610
17.....	320	423	309	947	1,370	427	329	225	956	1,900	861	467
18.....	334	421	308	1,240	1,410	460	327	310	842	2,860	677	353
19.....	324	489	319	1,090	1,300	430	316	328	817	3,330	450	327
20.....	321	439	314	1,060	1,200	431	1,490	331	818	2,670	382	329
21.....	297	458	315	2,190	1,260	429	315	439	820	2,200	538	328
22.....	216	487	313	1,720	1,260	429	324	738	819	2,520	649	326
23.....	311	512	192	1,420	1,260	423	325	772	816	2,760	710	249
24.....	322	575	297	1,250	1,260	411	327	996	975	2,460	753	438
25.....	325	518	320	1,130	1,250	207	327	437	932	1,770	539	454
26.....	324	650	310	1,360	1,180	382	289	456	988	1,220	655	442
27.....	326	501	308	1,470	1,130	427	309	1,490	1,030	1,260	1,170	444
28.....	323	457	312	1,660	1,130	427	315	1,200	1,030	1,420	823	443
29.....	252	433	310	1,830	1,100	427	330	......	1,080	1,340	641	437
30.....	308	429	238	2,690	1,100	483	332	......	1,130	1,590	534	413
31.....	314	430	......	6,640	......	390	333	......	1,180	......	469	......
Mean...	445	436	304	1,043	1,487	494	418	472	957	1,505	903	434

Monthly discharge of WEST CANADA CREEK AT POWER DAM, TRENTON FALLS, for the year ended June 30, 1918

[Drainage area, 376 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July..............................	2,290	203	445	1.18	1.36
August..............................	650	230	436	1.16	1.34
September..............................	420	95	304	0.809	0.90
October..............................	6,640	186	1,043	2.77	3.20
November..............................	4,830	1,100	1,487	3.96	4.41
December..............................	1,070	207	494	1.31	1.52
January..............................	1,490	267	418	1.11	1.28
February..............................	1,490	225	472	1.26	1.31
March..............................	1,180	816	957	2.54	2.93
April..............................	3,330	895	1,505	4.00	4.47
May..............................	1,960	375	903	2.40	2.77
June..............................	943	249	434	1.15	1.29
The year..............................	6,640	95	742	1.97	26.78

NOTE.— These quantities show the actual run-off as regulated by Hinckley reservoir and not the run-off due to the normal flow from the drainage area. This note applies also to tables for this station beginning with the year 1915.

WEST CANADA CREEK AT MORGAN DAM, TRENTON FALLS

This station was established February 8, 1904, by this Department and is maintained in coöperation with the United States Weather Bureau. A staff gage is located on the right bank of the stream about 100 feet above the site of the old Morgan dam. A new dam has been constructed by the State 60 feet above the old dam to divert water through the Nine-Mile creek feeder for the supply of the Rome summit level of the Barge canal. The crest, at elevation 753.25, has an ogee type section and a length of about 147 feet. There is a Taintor gate with a clear span of 30 feet, sill at elevation 744.0 and top when closed at elevation 756.5. The gage is read twice daily — at 7 A. M. and 6 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of WEST CANADA CREEK ABOVE MORGAN DAM, TRENTON FALLS, for the year ended June 30, 1918. C. W. Young, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	752.55	750.05	749.75	749.45	754.9	751.05	750.05	749.85	750.95	751.05	753.65	753.8
2.....	751.75	752.05	749.75	749.45	753.75	751.05	750.05	749.65	750.95	751.05	753.65	753.85
3.....	751.15	754.05	751.75	749.45	752.15	751.05	750.05	749.85	750.95	751.05	753.65	753.95
4.....	750.75	754.05	753.75	749.45	751.65	751.05	750.05	749.85	750.95	751.05	753.65	753.85
5.....	750.35	754.05	753.75	749.45	751.05	750.25	750.05	749.85	750.95	751.05	752.05	753.75
6.....	750.25	754.05	753.75	749.45	751.05	750.25	750.05	749.85	700.95	751.05	751.85	753.75
7.....	749.85	754.05	753.75	749.1	751.0	750.05	750.05	749.85	750.95	751.05	751.45	753.75
8.....	750.0	754.05	753.75	749.45	750.95	750.05	750.05	749.85	750.75	750.95	750.05	753.75
9.....	750.15	752.0	749.65	749.45	750.95	750.05	749.95	749.85	750.75	750.95	750.0	753.75
10.....	750.2	749.95	749.65	749.45	751.05	750.05	749.95	749.85	750.85	751.0	750.15	753.75
11.....	750.25	749.95	749.65	749.45	750.95	750.05	749.9	749.85	750.85	751.05	750.35	753.75
12.....	750.25	749.95	751.7	749.45	750.95	750.05	749.85	749.85	750.85	751.05	750.75	753.8
13.....	750.25	749.95	749.65	749.45	750.95	750.05	749.85	749.85	750.85	751.05	750.75	753.9
14.....	750.25	749.95	749.65	749.25	750.95	750.05	750.15	749.85	750.9	751.15	751.75	753.8
15.....	750.05	749.95	749.65	749.45	750.95	750.05	750.35	749.85	750.95	751.25	752.15	753.85
16.....	750.05	749.95	749.45	750.7	750.95	750.05	749.9	749.85	750.95	751.45	751.65	754.05
17.....	750.05	750.60	749.65	751.05	750.95	750.05	749.85	749.85	750.75	753.9	750.9	754.25
18.....	750.05	752.25	749.45	750.85	750.95	750.05	749.85	749.85	750.75	753.85	750.85	754.35
19.....	750.05	753.5	749.45	750.95	750.85	750.05	749.85	749.85	750.75	753.85	750.25	754.25
20.....	750.05	753.55	749.45	751.05	750.85	750.05	749.85	749.85	750.85	753.85	750.25	754.25
21.....	750.05	753.55	749.45	751.05	750.85	750.05	749.85	749.85	750.85	753.95	750.1	754.25
22.....	750.05	753.55	749.45	751.05	750.85	750.05	749.85	749.85	750.85	753.95	752.45	754.25
23.....	750.05	753.85	749.35	751.05	751.05	750.05	749.85	749.85	750.85	753.95	754.75	754.05
24.....	750.05	753.85	749.45	750.85	751.05	750.05	749.85	749.85	750.85	753.95	754.7	753.95
25.....	750.05	754.05	749.45	750.85	751.05	750.05	749.85	749.85	750.85	753.85	754.65	754.05
26.....	750.05	754.05	749.45	750.85	751.05	750.05	749.85	750.3	750.85	753.85	754.55	754.05
27.....	750.05	751.9	749.45	750.85	751.05	750.05	749.85	750.95	750.85	753.75	754.75	754.05
28.....	749.95	749.75	749.45	750.85	751.05	750.05	749.85	751.0	751.05	753.6	754.6	754.05
29.....	750.05	749.75	749.45	750.15	751.05	750.05	749.85	......	751.05	753.55	754.3	753.95
30.....	750.05	749.75	749.15	752.0	751.05	750.05	749.85	......	751.05	753.65	754.0	753.95
31.....	750.05	749.75	......	755.85	......	750.05	749.85	......	751.05	......	753.95	......

WEST CANADA CREEK AT KAST BRIDGE

Location.— At the highway bridge over West Canada creek known as Kast bridge, opposite the station of that name on the Herkimer and Remsen branch of the N. Y. C. R. R., about 3½ miles above the village of Herkimer.

Drainage area.— 575 square miles.

Records available.— Water-surface elevations, May 15, 1904, to June 30, 1918; discharge, January 1, 1907, to June 30, 1918.

Gage.— The gage is of the weight-and-reel type and is secured to the upstream side of the bridge. It is read twice daily — at 8 A. M. and 4 P. M.— to hundredths.

Control.— Gravel and cobble rift about 1,500 feet below the gage. The bed of the stream is permanent with a fairly straight and uniform channel from the control to quite a distance above the gage.

Extremes of discharge.— Current year: Maximum stage recorded, October 31, at 7:45 A. M., elevation, 447.18; discharge, 7,730 second-feet. Minimum stage recorded, September 3, at 7:30 A. M., elevation, 442.06; discharge, 144 second-feet.

1907–1918: Maximum recorded discharge, March 26, 1913, at 8 A. M., elevation 451.06; estimated discharge, 23,300 second-feet. (See foot-note.) Minimum recorded discharge, September 12, 1913, at 8 A. M., elevation 441.64; discharge, 80 second-feet.

Winter flow.— Discharge relation affected by ice conditions. Discharge during January to March, inclusive, omitted.

Diversion.— The Consolidated Water Company of Utica diverts water at Hinckley for the supply of the city of Utica.

Regulation.— Seasonal by Barge canal storage reservoir at Hinckley, and daily by power-plant pondage at Trenton Falls.

NOTE.— A maximum elevation of 453.00 was recorded on February 11, 1917, at 4 P. M., due to backwater caused by stream filling with [illegible] and snow, but it is not believed that the discharge was a maximum.

Discharge measurements of WEST CANADA CREEK AT KAST BRIDGE, for the year ended June 30, 1918

DATE	Made by	Elevation of water-surface	Discharge
1917		*Feet*	*Sec.-ft.*
October 29.....	M. W. Grimes and J. Labishiner....................	444.59	2.400
October 29.....	M. W. Grimes and J. Labishiner....................	445.19	3,480
1918			
April 19.......	M. W. Grimes and R. H. Kay.......................	446.01	4.940

Daily elevation of water-surface (B. C. datum) of WEST CANADA CREEK AT KAST BRIDGE, NEAR HERKIMER, for the year ended June 30, 1918. Lloyd Kast, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	444.86	442.93	442.96	442.76	446.26	444.14	443.38	446.03	......	445.08	444.26	443.30
2.....	444.66	442.97	443.10	442.76	445.32	443.76	443.36	444.94	......	445.20	445.20	443.23
3.....	444.21	442.72	442.37	442.64	444.75	443.80	443.46	444.88	......	444.86	445.13	443.06
4.....	443.87	442.96	442.57	443.10	444.31	443.55	443.42	444.87	......	444.39	445.72	443.02
5.....	443.59	442.98	442.60	443.26	444.06	443.03	443.46	444.89	......	444.41	444.44	442.98
6.....	443.44	442.94	442.66	443.18	444.18	443.02	443.47	444.89	......	444.38	444.16	442.90
7.....	443.44	442.79	442.76	442.84	444.10	442.88	443.94	444.84	......	444.42	444.21	443.36
8.....	443.42	442.96	442.72	442.68	444.10	442.74	443.64	444.72	......	444.72	443.32	443.20
9.....	443.40	443.56	442.68	443.08	444.12	442.95	443.60	444.68	......	445.34	443.43	443.14
10.....	443.54	443.23	442.72	442.86	444.09	442.95	443.66	444.52	......	444.54	443.52	443.56
11.....	443.68	443.02	442.66	442.76	444.06	443.00	443.68	444.52	......	444.56	443.62	443.24
12.....	443.82	442.98	442.64	442.85	444.07	443.14	443.72	444.37	......	444.48	443.79	444.88
13.....	443.38	442.96	442.74	443.56	444.00	443.11	443.60	444.69	......	444.41	445.04	444.09
14.....	443.46	443.00	442.70	442.90	443.92	443.12	443.72	444.72	......	444.64	444.82	443.96
15.....	443.40	443.03	442.68	443.73	444.00	443.18	445.03	444.79	......	444.48	444.78	443.96
16.....	443.64	442.95	442.75	443.44	443.97	443.22	444.68	444.78	......	444.42	444.35	443.68
17.....	443.32	442.96	442.54	443.28	443.96	443.20	444.76	444.74	......	444.99	443.96	443.41
18.....	443.36	442.86	442.60	443.99	443.92	443.22	444.86	444.68	......	445.70	443.76	443.14
19.....	443.31	442.64	442.64	443.32	443.90	443.35	444.90	444.53	......	446.00	443.44	442.95
20.....	443.23	442.66	442.70	444.82	443.92	443.38	445.28	......	......	445.62	443.38	442.78
21.....	443.24	442.52	442.72	444.58	443.94	443.30	445.39	......	......	445.37	443.80	442.58
22.....	443.06	442.59	442.72	444.44	444.11	443.27	445.67	......	445.76	445.75	443.76	442.06
23.....	443.04	442.71	442.61	444.08	444.42	443.20	445.72	......	445.38	445.82	443.93	442.90
24.....	442.99	443.12	442.38	444.00	444.03	443.34	445.85	......	445.00	445.64	443.73	442.91
25.....	443.06	443.18	442.66	444.24	443.88	443.45	445.90	......	444.96	445.08	443.50	442.72
26.....	443.00	442.82	442.67	444.18	443.82	443.42	445.67	......	444.76	444.76	443.52	442.64
27.....	443.02	442.88	442.68	443.94	443.84	443.24	445.94	......	444.29	444.56	444.16	442.56
28.....	442.98	442.84	442.74	444.68	443.82	443.30	446.22	......	444.22	444.68	443.90	442.66
29.....	443.01	443.02	442.67	444.86	443.84	443.20	446.13	......	444.62	444.57	443.67	442.62
30.....	442.97	443.00	442.82	445.98	443.81	443.26	446.10	......	444.79	444.95	443.44	442.69
31.....	442.94	442.97	......	447.16	......	443.24	446.10	......	445.00	......	443.34	......

NOTE.— River partly frozen over, December 12 to January 5: entirely frozen over, except narrow channel under gage, January 6 to January 31: entirely frozen, February 1 to March 21. Measurements to ice, February 1 to February 19. February 20 to March 21, ice jam under bridge; no readings taken.

HERKIMER, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	2,820	605	626	496	5,500	1,790	......	......	......	3,170	1,940	892
2	2,500	633	730	496	3,590	1,340	......	......	......	3,380	3,380	834
3	1,870	472	280	424	2,640	1,380	......	......	......	2,820	3,250	698
4	1,470	626	382	730	2,010	1,130	......	......	......	2,120	4,360	668
5	1,170	640	400	858	1,690	675	......	......	......	2,150	2,190	640
6	1,020	612	436	794	1,840	668	......	......	......	2,110	1,820	584
7	1,020	514	496	544	1,740	570	......	......	......	2,170	1,870	946
8	1,000	626	472	448	1,740	484	......	......	......	2,590	910	810
9	982	1,140	448	714	1,770	619	......	......	......	3,630	1,010	762
10	1,120	834	472	556	1,730	619	......	......	......	2,330	1,100	1,140
11	1,260	668	436	496	1,690	654	......	......	......	2,360	1,200	842
12	1,410	640	424	550	1,700	762	......	......	......	2,250	1,370	2,850
13	964	626	484	1,140	1,620	......	......	......	......	2,150	3,100	1,730
14	1,040	654	460	584	1,530	......	......	......	......	2,470	2,750	1,570
15	982	675	448	1,310	1,620	......	......	......	......	2,250	2,690	1,570
16	1,220	619	490	1,020	1,590	......	......	......	......	2,170	2,070	1,260
17	910	626	365	874	1,570	......	......	......	......	3,020	1,570	991
18	946	556	400	1,610	1,530	......	......	......	......	4,320	1,340	762
19	901	424	424	910	1,500	......	......	......	......	4,930	1,020	619
20	834	436	460	2,750	1,530	......	......	......	......	4,160	964	508
21	842	355	472	2,390	1,550	......	......	......	......	3,690	1,380	388
22	698	394	472	2,190	1,750	......	......	......	4,440	4,420	1,340	144
23	682	466	406	1,720	2,170	......	......	......	3,700	4,560	1,540	584
24	647	746	285	1,620	2,660	......	......	......	3,040	4,200	1,310	591
25	698	794	436	1,920	1,480	......	......	......	2,980	3,170	1,080	472
26	654	532	442	1,840	1,410	......	......	......	2,660	2,660	1,100	424
27	668	570	448	1,550	1,430	......	......	......	1,980	2,360	1,820	376
28	640	544	484	2,530	1,410	......	......	......	1,890	2,530	1,500	436
29	661	668	442	2,820	1,430	......	......	......	2,450	2,380	1,250	412
30	633	654	532	4,880	1,390	......	......	......	2,700	2,960	1,020	454
31	612	633	......	7,680	......	......	......	......	3,040	......	928	......
Mean	1,060	612	452	1,563	1,894	......	......	......	......	2,983	1,747	832

NOTE.— Ice conditions, December 12 to March 21, inclusive; discharge not computed.

Monthly discharge of WEST CANADA CREEK AT KAST BRIDGE, NEAR HERKIMER, for the year ended June 30, 1918

[Drainage area, 575 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	2,820	612	1,060	1.84	2.12
August	1,140	355	612	1.06	1.22
September	730	280	452	0.786	0.88
October	7,680	424	1,563	2.72	3.14
November	5,500	1,390	1,894	3.29	3.67
December	....	....	....	....	....
January	....	....	....	....	....
February	....	....	....	....	....
March	....	....	....	....	....
April	4,930	2,110	2,983	5.19	5.79
May	4,360	910	1,747	3.04	3.50
June	2,850	144	832	1.45	1.62

NOTE.— These quantities show the actual run-off as regulated by Hinckley reservoir and not the run-off due to the normal flow from the drainage area.

This note applies also to tables for this station beginning with the year 1915.

EAST CANADA CREEK

DESCRIPTION

East Canada creek rises in Hamilton county and flows southward between Herkimer and Fulton counties, joining the Mohawk at East Creek. In a general way its drainage basin is similar to that of West Canada creek, although its flow is less sustained and regular.

Spruce creek, the principal tributary of East Canada creek, enters 1 mile above Dolgeville and drains an area of 50 square miles. Water is diverted from this creek and from Beaver creek, one of the tributaries at Diamond Hill, and is carried to Little Falls through a cast-iron conduit 9 miles long.

For table of drainage areas of East Canada creek, see page 287.

EAST CANADA CREEK AT DOLGEVILLE

A gaging station on this stream was established for the U. S. Board of Engineers on Deep Waterways in 1898. It was maintained by the U. S. Geological Survey in coöperation with this Department from 1900 to June, 1907, inclusive, when it was taken over by this Department.

Location.— At the power-plant of the Herkimer County Light and Power Company at High falls about 1 mile below the village of Dolgeville and about 7 miles above the mouth of the stream.

Drainage area.— 257 square miles.

Records available.— September 23, 1898, to June 30, 1918.

Gage.— Above dam, a reference point on the right abutment; lower gage, a staff secured to the side wall of the tail-race below the power-plant. Readings twice daily — at 7 A. M. and 6 P. M.

Discharge computations.— Discharge over dam computed from curve based on United States Geological Survey experiments at Cornell University, with a full-sized model of the crest. Estimated flow through the turbines based on ratings by current-meter measurements made in the tail-race of the power-plant.

Control.—A masonry dam about 19 feet high with fixed flat crest 6 feet wide sloping downward upstream about 1 foot in 6, 190.25 feet long, upon which flash-boards are maintained during ordinary stages of the stream, together with turbines in power-plant.

Extremes of discharge.—Current year: Maximum stage recorded, October 30, at 6 P. M., discharge not available. Minimum discharge recorded, May 26, estimated as 76 second-feet.

1898–1918: Maximum discharge recorded, March 26, 1913, at 9 P. M., approximately 14,500 second-feet. Minimum discharge recorded, August 21, 1910, 0 second-feet. No water was used for 19 hours while the pond was filling.

Winter flow.—Very slightly affected by ice, as the crest is kept clean during the winter months.

Diversion.—From Spruce and Beaver creeks at Diamond Hill for water-supply of Little Falls; from Cold brook for water-supply of Dolgeville. The run-off given below is that passing the station and is exclusive of the above diversions.

Regulation.—By storage on Canada lake and several smaller lakes tributary to Canada lake. The flow from the smaller lakes is used to maintain a nearly constant elevation of Canada lake which in turn is used to regulate the flow in East Canada creek.

Daily discharge, in second-feet, of EAST CANADA CREEK AT DOLGEVILLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	1,330	235	337	233	1,620	383	231	231	678	2,800	1,320	433
2	1,020	268	385	238	1,060	234	247	209	655	3,430	1,140	372
3	669	268	255	204	1,070	275	281	231	499	3,640	1,060	328
4	257	204	233	397	607	306	248	231	485	2,600	993	305
5	314	149	232	655	414	315	231	247	500	1,640	616	315
6	245	164	204	878	437	304	214	231	522	1,810	518	379
7	202	164	218	562	435	247	248	213	480	1,900	544	335
8	174	178	180	485	491	233	261	213	558	2,240	688	805
9	264	397	145	482	488	229	274	213	617	3,300	610	647
10	745	510	164	481	409	274	274	194	517	3,270	651	905
11	736	298	179	345	369	292	286	213	715	1,910	654	599
12	940	211	178	272	431	298	274	213	821	1,510	589	1,520
13	692	152	167	722	448	273	235	180	619	1,180	3,530	1,400
14	662	173	166	769	444	307	247	166	654	1,190	2,970	980
15	632	204	164	1,032	423	308	261	256	631	1,090	1,840	719
16	522	415	125	1,337	414	232	261	316	468	1,580	1,090	553
17	439	296	192	1,044	396	307	261	256	434	2,150	867	448
18	381	239	152	608	284	305	247	307	581	3,230	646	472
19	397	148	152	486	388	307	247	307	487	2,420	541	401
20	301	164	136	636	383	308	231	873	911	2,350	516	384
21	248	178	152	210	362	307	247	820	1,140	1,720	710	406
22	360	164	145	579	441	307	247	925	1,590	2,850	599	456
23	349	192	113	525	589	254	247	780	2,120	2,290	595	355
24	279	568	153	550	518	307	247	880	1,910	1,710	566	381
25	259	416	166	735	334	295	231	1,450	1,780	1,480	469	385
26	245	236	166	710	343	286	231	895	1,620	1,200	†105	385
27	245	178	160	491	259	286	216	837	1,850	1,140	477	392
28	*257	178	206	541	236	298	231	714	1,500	1,050	581	385
29	*246	319	193	1,040	272	286	247	......	1,210	1,030	557	425
30	259	384	184	3,150	305	234	232	......	1,960	1,200	528	416
31	220	296	......	3,070	......	213	231	......	2,410	......	547	......
Mean	448	256	187	757	489	284	247	450	998	2,030	872	565

* Estimated. † The small flow on May 26 probably due to storage regulation.

Monthly discharge of EAST CANADA CREEK AT DOLGEVILLE, for the year ended June 30, 1918

[Drainage area, 257 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	1,330	174	448	1.74	2.00
August	568	149	256	0.996	1.15
September	385	113	187	0.728	0.81
October	3,150	204	757	2.94	3.39
November	1,620	236	489	1.90	2.12
December	383	213	284	1.10	1.27
January	286	214	247	0.961	1.11
February	1,450	166	450	1.75	1.82
March	2,410	434	998	3.88	4.47
April	3,640	1,030	2,030	7.90	8.81
May	3,530	105	872	3.39	3.91
June	1,520	305	565	2.20	2.45
The year	3,640	105	631	2.46	33.32

SCHOHARIE CREEK

DESCRIPTION OF BASIN

The source of Schoharie creek is about two miles east of Tannersville, at an elevation of 1,940 feet. The source is within about four miles of the easterly escarpment of the Catskill plateau. The stream valley is broad and the slope moderate throughout the upper regions. A small area, which apparently was formerly tributary to Schoharie creek, has been cut off by erosion and has thus become tributary to Kaaterskill. Nearly the entire drainage basin is irregular and precipitous. It is extensively covered with second-growth forests.

The basin of Schoharie creek is largely overlaid by slaty rocks, into which water percolates only to a slight depth. The valley soil is largely thin plastic clay, formed by disintegration of the native rocks. Passing from the headwaters toward the mouth, Schoharie creek crosses successively the Devonian sedimentary rocks, chiefly of the Catskill, Oneonta, Ithaca and Hamilton formations. All of these may be considered fairly impervious and free from fissures. It then crosses belts of Silurian formations, including Helderberg, Salina, Niagara and Medina sandstone and limestone. These rocks are underlaid by impervious Hudson river shales, but are themselves permeable, yielding numerous springs at the lower partings.

It is the intention of the Board of Water Supply of the city of New York to build a dam on the Schoharie creek at Gilboa for an additional water-supply. A tunnel about 18 miles long, beginning at a point on the creek near the county line north of Prattsville, will carry the water to the Esopus creek in the vicinity of Allaben, whence it will follow the natural course of the Esopus creek until it empties into the Ashokan reservoir. The area diverted will be approximately 314 square miles.

The entire drainage basin of 930* square miles is shown on the topograhic maps of the United States Geological Survey. For area at different points along the stream, see table on page 288.

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* The 930 square miles used above is the result of a joint determination of drainage areas, based on independent computations by the engineers of the Board of Water Supply of the city of New York and of the Department of State Engineer, and replaces the figure 900 previously used in the reports of the State Engineer.

SCHOHARIE CREEK AT PRATTSVILLE

Location.— On upstream side of highway bridge at Prattsville. Automatic gage is located on downstream side, left bank. Pipe gage on right bank below bridge has been discontinued.

Drainage area.— 236 square miles, planimetered on U. S. G. S. topographic maps. 1907–1912, inclusive, area considered 240 square miles, based on published records.

Records available.— January 1, 1903, to June 30, 1918.

Gage.— Standard Board of Water Supply chain gage, and Friez automatic water-stage recorder. Gage is read twice daily.

Discharge measurements.— From highway bridge; at low stages by wading 600 feet downstream from bridge.

Control.— Gravel bed, some small boulders. Affected by extreme freshets. Clear span, 187.5 feet. During low stages, dead water from Sta. 60 upward. Channel above bridge straight for about 300 feet. Channel below bridge straight for about 600 feet, with tendency to bifurcate at this point, where wading measurements are made. Both banks high, clean, and not liable to overflow except in extreme freshets.

Extremes of discharge.— Current year: Maximum stage recorded, 13.51 feet on October 30 at 2 P. M.; discharge, 16,276 second-feet, sustained 15 minutes. Minimum stage recorded, 4.61 feet on October 11; discharge, 25 second-feet.

1907–1918: Maximum stage recorded, 13.10 feet on March 27, 1913, at 4:45 P. M.; discharge, 16,500 second-feet. Minimum stage recorded, 4.13 feet on August 3, 1913; discharge, 5 second-feet.

Winter flow.— Discharge relation seriously affected by ice conditions. Flow determined by meter measurements and climatological data.

Accuracy.— Discharge rating curve fairly well defined. Beginning October 1, 1915, discharge is computed from record of automatic water-stage recorder.

Coöperation.— Maintained by Board of Water Supply of the city of New York.

Climatological observations are made at this station.

Daily discharge, in second-feet, of SCHOHARIE CREEK AT PRATTSVILLE, for the year ended June 30, 1918. Mary E. Stickles and B. W. Stickles, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	286	44	163	33	*1,761	342	50	34	2,700	615	*756	375
2	291	41	141	*29	*1,250	286	47	33	1,390	*989	*683	294
3	245	*36	118	30	948	246	46	31	1,036	1,175	*536	248
4	203	32	91	36	748	201	44	31	669	1,054	468	*207
5	187	29	*82	38	625	170	43	30	705	726	428	175
6	175	*26	71	40	556	141	41	39	1,682	588	386	169
7	159	33	66	38	492	121	41	44	1,185	516	357	248
8	148	35	94	33	448	107	*40	38	756	474	320	231
9	124	†54	88	29	411	99	40	36	669	868	*280	169
10	124	79	82	29	385	93	38	34	1,155	935	270	149
11	171	54	61	25	348	*88	38	52	*649	712	332	136
12	183	41	56	43	320	86	93	61	780	649	280	240
13	159	33	*68	163	281	83	79	314	1,500	608	*286	280
14	144	29	71	97	265	107	72	986	1,017	812	*1,007	196
15	152	32	56	94	276	101	68	2,295	812	1,677	649	169
16	141	*35	43	88	237	96	64	940	608	*1,857	486	142
17	*127	127	48	66	206	93	62	638	944	1,761	417	133
18	121	50	56	76	197	*91	60	475	1,017	2,535	357	110
19	101	36	52	54	*206	88	57	1,168	1,036	1,996	338	90
20	97	33	54	245	159	86	55	*6,244	1,423	1,315	712	83
21	91	80	46	208	170	86	54	1,141	1,689	2,048	462	*78
22	82	29	38	156	201	81	52	676	1,957	2,921	406	252
23	63	26	33	134	498	79	50	586	1,761	1,821	396	235
24	*54	391	33	516	385	79	47	586	1,185	1,434	297	172
25	58	291	*29	2,022	251	79	44	770	1,017	1,045	250	124
26	54	156	30	*828	178	74	41	3,584	860	828	450	105
27	52	124	29	615	148	68	40	1,222	656	698	*523	*93
28	46	91	26	1,588	131	64	38	836	548	615	396	88
29	46	127	26	1,007	118	58	37	......	498	*555	320	88
30	*46	212	85	†6,068	148	55	36	......	480	622	391	83
31	46	203	......	3,060	......	54	*34	......	516	......	422	......
Mean	128	83	63	564	412	113	50	819	1,060	1,148	441	172

* Meter measurement. † New rating curve in effect October 30.

NOTE.— Ice conditions, November 25 to February 15, inclusive; flow based on meter measurements and climatological data.

Monthly discharge, in second-feet, of SCHOHARIE CREEK AT PRATTSVILLE, for the year ended June 30, 1918

[Drainage area, 286 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	291	46	128	0.54	0.627
August	391	26	83	0.35	0.406
September	163	26	63	0.27	0.300
October	6,068	25	564	2.39	2.757
November	1,761	118	412	1.75	1.947
December	342	54	113	0.48	0.555
January	93	34	50	0.21	0.242
February	6,244	30	819	3.47	3.613
March	2,700	480	1,060	4.49	5.173
April	2,921	474	1,148	4.86	5.428
May	1,007	250	441	1.87	2.150
June	375	78	172	0.73	0.814
The year	6,244	25	*417	*1.77	*24.012

* Computed by the State Engineer.

SCHOHARIE CREEK AT MIDDLEBURG

Location.— At highway bridge over Schoharie creek at Middleburg.

Drainage area.— 532 square miles.* (From U. S. Geological Survey topographic maps.)

Records available.— August 24, 1906, to June 30, 1918.

Gage.— Staff in two sections, the lower attached to the end of a timber crib about 400 feet below the bridge, and the upper section secured to rubble retaining wall about 160 feet below bridge. Read twice daily — at 9 A. M. and 5 P. M.— to half-tenths.

Discharge measurements.— From bridge and by wading.

Control.— Riffle about 1,600 feet below bridge. The bed of the stream is of gravel and cobblestones and fairly smooth and permanent. The stream overflows the banks during floods.

Extremes of discharge.— Current year: Maximum stage recorded, 11.5 feet on October 30 at 5 P. M.; discharge, approximately 20,300 second-feet. Minimum stage recorded, 0.75 foot on September 29 and 30; discharge, 52 second-feet.

1906–1918: Maximum recorded discharge, February 20, 1909, at 9 A. M., approximately 31,600 second-feet. Minimum discharge recorded, September 14 to 21, inclusive, 1913, 12 second-feet.

Winter flow.— Very slight effect from ice, open-water rating curve used.

Accuracy.— New rating curve used, beginning October 1, 1915; well defined to a gage height of 6 feet.

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* The 532 square miles used above is the result of a joint determination of drainage areas, based on independent computations by engineers of the Board of Water Supply of the city of New York and of the Department of State Engineer, and replaces the figure 527 previously used in reports of the State Engineer.

Discharge measurements of SCHOHARIE CREEK AT MIDDLEBURG, for the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
July 6.......	P. F. Scully and C. J. Grace, Jr.......................	1.55	286
October 5....	M. W. Grimes and J. Labishiner......................	0.93	82.6
1918			
February 28..	P. F. Scully and J. Labishiner........................	3.41	1,690

Daily gage height, in feet, of SCHOHARIE CREEK AT MIDDLEBURG, for the year ended June 30, 1918. George L. Danforth, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	2.02	0.95	1.82	0.80	4.70	2.12	1.70	1.75	5.35	2.85	3.30	2.48
2.....	2.00	0.95	1.72	0.85	4.05	2.30	1.70	1.65	4.60	3.25	3.05	2.15
3.....	1.98	0.98	1.58	0.80	3.38	1.90	1.65	1.60	3.65	3.80	2.78	1.95
4.....	1.78	0.92	1.42	0.80	3.05	1.82	1.65	1.60	2.90	3.52	2.60	1.78
5.....	1.62	0.85	1.32	0.88	2.88	1.70	1.60	1.65	2.95	3.18	2.55	1.70
6.....	1.52	0.80	1.28	1.08	2.78	1.70	1.60	1.70	4.80	2.88	2.55	1.68
7.....	1.48	0.80	1.20	0.98	2.65	1.62	1.65	1.75	4.75	2.78	2.48	2.12
8.....	1.40	0.80	1.25	0.90	2.45	1.58	1.70	1.75	3.20	2.70	2.30	2.12
9.....	1.40	0.82	1.35	0.85	2.28	1.60	1.75	1.70	2.95	3.45	2.15	1.78
10.....	1.50	1.00	1.30	0.85	2.18	1.60	1.80	1.70	3.15	3.78	2.02	1.75
11.....	1.62	1.18	1.25	0.80	2.10	1.60	1.88	1.70	2.95	3.45	2.10	1.75
12.....	1.92	0.98	1.18	0.85	2.05	1.60	1.92	1.78	3.05	3.25	2.10	2.25
13.....	1.65	0.90	1.10	1.60	2.02	1.60	1.92	3.80	5.25	3.08	2.35	2.20
14.....	1.58	0.85	1.15	1.45	1.90	1.75	2.00	3.90	4.05	4.25	3.25	2.05
15.....	2.25	0.80	1.12	1.25	1.85	1.75	2.00	7.90	3.45	5.00	2.90	1.75
16.....	1.88	0.88	1.05	1.25	1.85	1.80	2.08	4.75	2.80	4.85	2.55	1.68
17.....	1.62	2.05	1.05	1.18	1.78	1.80	2.00	3.08	3.20	4.70	2.38	1.60
18.....	1.90	1.40	1.05	1.10	1.72	1.75	1.95	2.65	4.15	5.40	2.25	1.55
19.....	1.75	1.10	1.00	1.15	1.65	1.78	2.00	3.60	4.05	4.85	2.50	1.38
20.....	1.60	1.00	0.98	1.20	1.60	1.78	2.00	10.10	4.65	3.75	3.25	1.25
21.....	1.52	0.88	0.95	1.82	1.55	1.62	2.00	4.45	4.55	3.85	2.62	1.20
22.....	1.48	0.85	0.92	1.58	1.65	1.60	1.95	3.60	4.75	5.90	2.45	2.15
23.....	1.38	0.85	0.85	1.48	3.25	1.92	1.95	5.25	4.50	4.60	2.35	2.08
24.....	1.28	2.35	0.85	1.60	2.42	1.62	1.95	6.50	3.90	3.90	2.35	1.80
25.....	1.25	2.30	0.85	5.45	2.05	1.85	1.95	6.40	3.55	3.40	2.10	1.58
26.....	1.28	1.70	0.82	3.40	1.85	2.85	1.95	7.85	3.45	3.45	3.05	1.40
27.....	1.22	1.52	0.80	2.68	1.80	3.45	1.90	4.40	3.02	3.10	2.80	1.40
28.....	1.15	1.35	0.80	4.25	1.80	2.32	1.85	3.60	2.75	2.85	2.55	1.30
29.....	1.10	1.25	0.75	3.60	1.78	1.98	1.80	......	2.75	2.68	2.38	1.25
30.....	1.05	1.20	0.75	9.64	1.72	1.88	1.80	......	2.70	2.90	2.45	1.25
31.....	1.02	1.58	......	6.94	......	1.78	1.80	......	2.75	......	2.55	......

Daily discharge, in second-feet, of SCHOHARIE CREEK AT MIDDLEBURG, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	502	90	395	61	3,170	559	......	......	4,160	1,080	1,490	796
2.....	490	90	346	70	2,310	672	......	......	3,030	1,440	1,250	578
3.....	479	97	283	61	1,570	435	......	......	1,850	2,020	1,020	462
4.....	375	84	222	61	1,250	375	......	......	1,120	1,710	884	375
5.....	301	70	189	76	1,100	337	......	......	1,170	1,370	847	337
6.....	258	61	177	121	1,020	337	......	......	3,310	1,100	847	328
7.....	243	61	153	97	922	301	......	......	3,240	1,020	796	559
8.....	215	61	168	80	775	283	......	......	1,390	960	672	559
9.....	215	65	199	70	659	292	......	......	1,170	1,640	578	375
10.....	250	102	183	70	597	......	......	......	1,350	2,000	502	360
11.....	301	147	168	61	547	......	......	......	1,170	1,640	547	360
12.....	446	97	147	70	519	......	......	......	1,250	1,440	547	640
13.....	314	80	126	292	502	......	......	......	4,090	1,280	706	609
14.....	283	70	139	232	435	......	......	......	2,310	2,560	1,440	519
15.....	640	61	131	168	410	......	......	......	1,640	3,610	1,120	360
16.....	425	76	114	168	410	......	......	......	1,040	3,380	847	328
17.....	301	519	114	147	375	......	......	......	1,390	3,170	726	292
18.....	435	215	114	126	346	......	......	......	2,480	4,250	640	270
19.....	360	126	102	139	314	......	......	......	2,310	3,380	810	209
20.....	292	102	97	153	292	......	......	......	3,100	1,960	1,440	165
21.....	258	76	90	395	270	......	......	......	2,960	2,070	890	153
22.....	243	70	84	283	314	......	......	......	3,240	5,100	775	578
23.....	209	70	70	243	1,440	......	......	......	2,890	3,080	796	536
24.....	177	706	70	292	754	......	......	......	2,180	2,180	706	385
25.....	168	672	70	4,380	519	......	......	......	1,740	1,590	547	253
26.....	177	337	65	1,590	410	......	......	9,240	1,640	1,640	1,250	215
27.....	159	258	61	945	385	......	......	2,760	1,280	1,300	1,040	215
28.....	189	199	61	2,560	385	......	......	1,800	1,000	1,080	847	153
29.....	126	168	52	1,800	375	......	......	......	1,000	945	726	168
30.....	114	153	52	14,100	346	......	......	......	960	1,120	775	168
31.....	107	283	......	7,170	......	......	......	......	1,000	......	847	......
Mean...	290	170	141	1,162	757	......	......	......	2,007	2,034	865	379

NOTE.— December 10 to February 25, inclusive, ice period, discharge not computed.

Monthly discharge of SCHOHARIE CREEK AT MIDDLEBURG, for the year ended June 30, 1918

[Drainage area, 532 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July..............................	640	107	290	0.545	0.63
August..............................	706	61	170	0.320	0.37
September..............................	395	52	141	0.265	0.30
October..............................	14,100	61	1,162	2.18	2.51
November..............................	3,170	270	757	1.42	1.58
December..............................	....	....	....	....	....
January..............................	....	....	....	....	....
February..............................	....	....	....	....	....
March..............................	4,160	960	2,007	3.77	4.35
April..............................	5,100	945	2,034	3.82	4.26
May..............................	1,490	502	865	1.63	1.88
June..............................	796	153	379	0.712	0.79

This station, established April 3, 1904, and maintained by this Department in coöperation with the United States Weather Bureau, is located on the D. & H. R. R. bridge across Schoharie creek near Schoharie Junction. Discharge is not computed at this station. The water-surface elevations are referred to United States Geological Survey datum. A standard chain gage attached to the downstream truss is read twice daily — between 6 and 7:30 A. M. and between 4:30 and 7 P. M.— to half-tenths.

Daily elevation of water-surface (U. S. G. S. datum) of SCHOHARIE CREEK AT CENTRAL BRIDGE, for the year ended June 30, 1918. A. M. Spencer, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	568.65	567.12	567.88	566.85	571.40	568.80	568.22	568.40	571.85	568.80	569.25	568.58
2.....	569.10	567.10	567.82	566.85	569.95	568.75	568.18	568.40	572.05	568.80	569.20	568.25
3.....	568.55	567.08	567.75	566.80	569.75	568.60	568.15	568.35	570.60	568.78	569.05	568.02
4.....	568.25	567.05	567.68	566.80	569.45	568.40	568.10	568.35	569.60	568.65	569.90	567.82
5.....	567.55	567.02	567.55	566.80	569.20	568.12	568.08	568.35	569.30	568.60	568.82	567.72
6.....	567.15	567.00	567.42	566.75	568.98	568.10	568.05	568.32	571.85	568.72	568.82	567.68
7.....	567.05	566.05	567.48	566.75	568.88	568.10	568.00	568.30	570.70	570.22	568.65	568.10
8.....	567.05	566.02	567.42	566.70	568.78	568.38	568.05	568.30	569.78	570.20	568.45	568.18
9.....	567.38	566.00	567.38	566.70	568.68	568.35	568.10	568.30	569.50	570.05	568.25	568.10
10.....	567.55	566.05	567.35	566.70	568.55	568.82	568.15	568.30	572.60	569.20	568.05	568.02
11.....	568.05	567.28	567.28	566.80	568.38	568.70	568.20	568.30	575.00	568.95	568.92	568.00
12.....	568.60	567.18	567.22	566.75	568.32	568.55	568.20	568.50	575.30	569.38	567.95	568.03
13.....	567.88	567.12	567.18	566.38	568.22	568.38	568.25	571.92	573.60	569.95	568.20	568.25
14.....	568.08	567.02	567.12	567.60	568.18	568.35	568.30	573.62	571.30	570.20	569.20	568.05
15.....	567.52	567.00	567.08	567.52	568.12	568.30	568.32	578.80	569.75	571.12	569.30	567.90
16.....	569.15	567.15	567.05	567.38	568.08	568.30	568.35	574.80	569.50	571.70	568.95	568.08
17.....	567.72	568.35	567.05	567.28	567.98	568.35	568.40	570.80	570.30	570.80	569.35	567.98
18.....	568.30	567.75	567.02	567.22	567.92	568.35	568.45	570.15	570.80	571.80	568.75	567.90
19.....	568.58	567.58	567.00	567.18	567.88	568.35	568.50	571.95	570.75	571.35	568.55	567.85
20.....	567.95	567.35	567.00	567.75	567.42	568.30	568.48	581.90	571.30	570.58	568.60	567.80
21.....	567.72	567.22	567.00	567.82	567.82	568.25	568.45	572.60	571.55	570.30	568.68	567.72
22.....	567.48	567.18	567.00	567.72	567.50	568.25	568.45	574.40	571.70	572.80	568.45	567.85
23.....	567.38	567.20	566.95	567.65	569.78	568.55	568.45	574.40	571.50	572.28	568.28	568.10
24.....	567.28	568.70	566.95	567.78	568.85	568.60	568.45	574.20	569.88	571.42	568.20	567.98
25.....	567.22	568.65	566.90	571.90	568.35	568.60	568.40	574.10	570.15	570.40	568.15	567.80
26.....	567.20	567.90	566.90	569.90	568.22	569.35	568.40	576.50	570.15	569.42	569.00	567.55
27.....	567.20	567.72	566.88	569.10	568.20	569.30	568.40	572.25	570.08	568.90	568.85	567.40
28.....	567.20	567.58	566.85	571.90	568.15	568.40	568.45	570.40	569.82	569.00	568.65	567.28
29.....	567.20	567.55	566.85	569.70	568.10	568.35	568.45	......	569.80	569.00	568.32	567.20
30.....	567.15	567.98	566.85	576.85	568.05	568.20	568.40	......	569.80	569.08	568.78	567.18
31.....	567.15	567.98	......	575.00	......	568.25	568.40	......	569.30	......	568.72	......

SCHOHARIE CREEK AT FORT HUNTER

This station, located on Schoharie creek above the State feeder dam at Fort Hunter, was originally established by the U. S. Deep Waterways Survey, September 24, 1898. Reëstablished November 17, 1904, in coöperation with the U. S. Weather Bureau, it is now maintained by this Department. Because of unfavorable conditions, increased leakage and indeterminate diversion for the supply of the Erie canal, discharge estimates were discontinued December 31, 1914. A chain gage on the downstream side near the south end of the highway bridge about 500 feet above the dam is read twice daily — at 8 A. M. and 5 P. M. — to tenths.

Daily elevation of water-surface (B. C. datum) of SCHOHARIE CREEK AT FORT HUNTER, for the year ended June 30, 1918. C. E. Wing, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	282.2	281.0	282.25	279.5	283.6	281.8	280.4	280.0	281.85	281.95	282.0	281.5
2.....	282.15	280.85	282.05	279.5	282.95	281.75	280.35	280.0	282.2	281.75	282.0	281.5
3.....	282.05	280.65	281.55	279.5	282.65	281.7	280.3	279.9	282.85	281.55	281.9	281.5
4.....	281.75	280.5	281.5	279.6	282.5	281.7	280.1	279.9	282.7	281.45	281.9	281.6
5.....	281.5	280.4	281.4	279.75	282.25	281.7	280.0	279.9	282.5	281.4	281.9	281.75
6.....	281.5	280.3	281.35	279.9	282.15	281.65	280.0	279.9	282.5	281.3	281.8	281.95
7.....	281.5	280.3	281.25	280.4	282.2	281.6	280.05	279.9	282.4	282.2	281.8	281.8
8.....	281.55	280.2	281.1	280.25	282.2	281.5	280.15	280.0	282.3	282.3	281.75	282.0
9.....	281.5	280.05	281.1	280.05	282.05	281.5	280.2	280.0	282.5	282.3	281.7	281.5
10.....	281.5	280.2	281.1	279.9	281.9	281.4	280.2	280.0	282.05	282.65	281.7	281.5
11.....	281.55	280.8	281.1	279.8	281.9	281.4	280.3	280.0	282.15	282.85	281.7	281.5
12.....	281.8	280.7	281.0	279.85	281.9	281.3	280.4	280.0	282.7	282.1	281.7	281.5
13.....	281.75	280.65	280.85	280.15	281.8	281.3	280.3	280.8	283.05	281.75	281.85	281.4
14.....	281.7	280.5	280.55	280.3	281.8	281.3	280.2	281.65	283.15	281.5	282.55	281.4
15.....	281.6	280.45	280.5	281.2	281.8	281.15	280.2	283.7	283.0	281.5	282.6	281.4
16.....	281.6	280.45	280.45	281.4	281.8	281.0	280.1	283.8	282.75	281.85	282.45	281.4
17.....	281.6	281.55	280.4	281.3	281.7	280.85	280.1	282.5	282.7	281.85	282.1	281.4
18.....	281.6	281.5	280.25	281.2	281.65	280.8	280.1	282.2	282.8	282.5	281.75	281.4
19.....	281.65	281.35	280.05	281.1	281.6	280.75	280.1	283.3	282.9	282.4	281.7	281.4
20.....	281.75	281.15	279.95	281.05	281.5	280.7	280.1	285.8	282.95	282.5	281.7	281.35
21.....	281.7	280.75	279.9	281.0	281.5	280.85	280.1	285.35	283.05	282.75	281.9	281.2
22.....	281.6	280.4	279.9	280.9	281.5	280.8	280.1	284.45	283.6	283.8	282.0	281.4
23.....	281.5	280.0	279.9	281.05	282.35	280.8	280.0	282.3	283.8	283.6	281.9	281.2
24.....	281.4	280.85	279.8	281.45	282.15	280.7	280.0	282.3	283.25	283.15	281.75	281.1
25.....	281.4	282.05	279.8	282.6	282.0	280.7	280.0	282.3	282.85	282.95	281.65	281.1
26.....	281.3	281.6	279.7	282.65	281.9	280.7	280.0	282.55	282.75	282.6	281.5	281.1
27.....	281.3	281.5	279.7	282.7	281.8	280.65	280.0	281.85	282.5	282.25	281.75	281.1
28.....	281.4	281.45	279.6	282.7	281.8	280.6	280.0	281.75	282.35	282.05	282.0	281.0
29.....	281.4	281.35	279.5	282.9	281.8	280.55	280.0	......	282.25	282.0	281.85	281.0
30.....	281.35	281.25	279.5	284.3	281.8	280.5	280.0	......	282.2	282.0	281.7	280.75
31.....	281.05	281.75	......	285.75	......	280.5	280.0	......	282.2	......	281.6	......

MOHAWK BASIN — MISCELLANEOUS DISCHARGE MEASUREMENTS

Discharge measurements of MOHAWK RIVER AT FLOYD AVENUE, ROME, for the year ended June 30, 1918

DATE	Made by	Elevation of water-surface	Discharge
1918			*Sec.-ft.*
April 26.......	M. W. Grimes and P. F. Scully....................	447.06	444

Discharge measurements of ORISKANY FEEDER AT ORISKANY, for the year ended June 30, 1918

DATE	Made by	Discharge
1917		*Sec.-ft.*
Sept. 21.......	G. E. Gibson and J. F. Southworth.......................	82

ESOPUS CREEK

DESCRIPTION

Esopus creek has its source in Winnisook lake on the northwestern slope of Slide mountain, the highest peak of the Catskills. From Big Indian to Ashokan reservoir the stream flows through a deep valley, flanked on both sides by timber-covered mountains. Numerous sites for dams or storage reservoirs are offered at points where the valley broadens out for a short distance to receive the inflowing waters of tributaries. The stream channel is relatively broad and shallow. The bed is covered with cobbles and small boulders left behind after the erosion of drift deposits, which formerly filled the valley. The drainage basin of Esopus creek is shown on the Margaretville, Phoenicia, Kaaterskill, Catskill, Slide Mountain, Rosendale and Rhinebeck sheets of the U. S. Geological Survey topographic maps. This stream is of great economical importance, owing to its relatively large yield and its location. The Ashokan reservoir, with a water-surface of 12 square miles and a total drainage area above the dam of 257 square miles, is one of the sources of water-supply for New York city.

Drainage areas of Esopus Creek *

(From U. S. G. S. topographic maps)

Limits	Area in Square Miles	
	Place to place	Total
Beaver Kill (Mink Hollow)		
Source to about ¾ mile north of Lake Hill	8.42	8.42
Esopus Creek		
Source to Coldbrook, at highway bridge	183.72	192.14
Coldbrook to Olive Bridge dam	64.38	256.52
Olive Bridge dam to pulp-mill, about 1½ miles south of Brown's Station	7.01	263.53
Pulp-mill to Kingston, at highway bridge	53.54	317.07
Saw Kill		
Source to about 4½ miles below Woodstock	32.99	....
Esopus Creek		
Kingston to Leggs Mills, about ½ mile northwest of Lake Katrine railroad station	19.72	369.78
Plattekill Creek		
Source to below pond, about 2 miles east of West Saugerties	17.35	387.13
Esopus Creek		
Leggs Mills to Glenerie, about 1 mile south of Mount Marion station at dam below W. S. R. R. bridge	28.95	416.08
Glenerie to Mount Marion, at highway bridge	2.13	418.21
Mount Marion to Saugerties, at dam below highway bridge	6.00	424.21

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* This table of drainage areas is the result of a joint determination of areas, based on independent computations by the engineers of the Board of Water Supply of the city of New York and of the Department of State Engineer.

ESOPUS CREEK AT COLDBROOK

Location.—At highway bridge about 1,000 feet above Coldbrook railroad station on U. & D. R. R.; about 6 miles west of Ashokan.

Drainage area.— 192 square miles.* (Measured on U. S. Geological Survey topographic maps.)

Records available.—August 27, 1913, to June 30, 1918.

Gages.— Standard B. W. S. chain gage, read twice daily. On June 15, 1916, a Friez automatic register was installed. These gages are located on the downstream side of the highway bridge.

Discharge measurements.— At low stages, made by wading; at high stage, from the highway bridge (clear span of 160 feet).

Control.— Coarse gravel, apparently permanent, and numerous small boulders and some riprap. Channel above station straight for about three hundred feet; water swift. Channel below station straight for about one thousand feet; water swift. Right bank high, grassed and largely covered with brush, not liable to overflow. Left bank high, wooded, not liable to overflow.

Extremes of discharge.— Current year: Maximum stage, 10.95 feet on October 30 at 12 M.; discharge, 11,450 second-feet, sustained momentarily. Minimum stage recorded, 3.25 feet on February 5 and 6; discharge, 36 second-feet (ice conditions).

1913–1918: Maximum stage recorded, 12.75 feet on November 9, 1913, at 8 P. M.; discharge, about 21,400 second-feet. Minimum stage recorded, 3.21 feet on October 14, 1914; discharge, 8 second-feet.

Winter flow.— Discharge relation seriously affected by ice. Flow determined by meter and float measurements and climatological data.

Accuracy.— Discharge rating curve well defined up to a gage height of 10 feet.

Coöperation.— Established and maintained by the Board of Water Supply of the city of New York. Turbidity and climatological observations are made at this station.

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* The 192 square miles used above is the result of a joint determination of drainage areas based on independent computations by the engineers of the Board of Water Supply of the city of New York and of the Department of State Engineer.

Daily discharge, in second-feet, of ESOPUS CREEK AT COLDBROOK, for the year ended June 30, 1918. Philip Dwyer and J. H. Joyce, Observers

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	450	100	252	66	1,680	360	108	42	2,226	808	631	465
2.....	465	96	232	*64	1,140	263	106	*40	1,570	1,260	564	410
3.....	365	91	204	61	824	245	104	40	1,290	1,380	505	377
4.....	315	80	177	66	625	207	102	38	992	*1,240	476	337
5.....	295	79	158	66	523	195	100	36	904	938	425	*320
6.....	259	79	150	66	460	189	100	36	1,290	765	391	304
7.....	263	87	140	64	400	177	116	46	1,320	660	*368	324
8.....	213	77	148	64	351	169	112	40	1,046	601	337	273
9.....	201	94	140	59	315	160	*107	38	904	856	308	236
10.....	238	125	129	56	291	153	102	36	896	929	304	216
11.....	335	98	120	54	259	148	100	40	723	779	280	*210
12.....	323	87	114	85	241	145	127	56	702	730	265	332
13.....	291	79	110	171	222	143	116	81	938	667	269	284
14.....	238	*74	106	110	210	177	106	106	904	723	482	243
15.....	219	76	102	110	198	166	98	96	779	848	391	223
16.....	207	131	94	110	186	160	91	87	709	947	368	194
17.....	195	153	91	96	177	155	85	81	832	1,130	354	180
18.....	207	106	*87	87	166	153	81	77	956	1,590	337	171
19.....	177	87	84	91	166	*169	76	702	1,046	1,390	312	166
20.....	183	79	76	174	160	171	73	3,806	1,450	1,110	354	146
21.....	*177	77	73	155	158	174	69	1,470	1,910	2,097	337	136
22.....	189	76	69	148	183	166	64	956	2,490	2,711	304	292
23.....	166	77	66	140	205	160	59	880	2,356	1,998	304	205
24.....	150	730	69	287	241	166	56	793	1,770	1,580	258	180
25.....	138	365	71	751	201	153	54	848	1,510	1,240	247	171
26.....	127	225	69	480	201	143	51	*2,765	1,260	992	350	*168
27.....	118	177	66	415	160	184	49	1,640	1,010	816	386	141
28.....	110	150	64	896	210	125	46	1,210	832	695	341	132
29.....	110	171	64	646	201	120	44	......	744	660	300	121
30.....	112	420	66	5,638	174	114	42	......	681	653	341	114
31.....	*106	323	......	3,245	......	110	42	......	674	......	482	......
Mean...	224	151	113	468	354	170	83	574	1,184	1,093	367	235

* Meter measurement.

NOTE.— Ice conditions, December 7 to February 19, inclusive; flow based on meter measurements and climatological data.

Monthly discharge of ESOPUS CREEK AT COLDBROOK, for the year ended June 30, 1918

[Drainage area, 192 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July........................	465	106	224	1.17	1.344
August........................	730	74	151	0.79	0.906
September........................	252	64	113	0.59	0.657
October........................	5,638	54	468	2.44	2.811
November........................	1,680	158	354	1.84	2.056
December........................	360	110	170	0.89	1.022
January........................	127	42	83	0.43	0.500
February........................	3,806	36	574	2.99	3.117
March........................	2,490	674	1,184	6.17	7.112
April........................	2,711	601	1,093	5.69	6.351
May........................	631	247	367	1.91	2.201
June........................	465	114	235	1.22	1.368
The year........................	5,638	36	*417	*2.17	*29.445

* Computed by State Engineer.

ESOPUS CREEK AT MOUNT MARION

Location.—At downstream side of Pleasant Valley bridge over Esopus creek, about 3/4 mile east of Mount Marion railroad station on West Shore railroad, and about 3 miles above Saugerties.

Drainage area.— Total drainage area above Mount Marion is 418 square miles as measured on U. S. Geological Survey topographic maps. Of this area 33 square miles of the Saw kill watershed is diverted for the Kingston water-supply, 17 square miles of the Plattekill creek watershed for the Saugerties water-supply, and 257 square miles at Brown's Station for New York city water-supply.

The conduit of the Olive Bridge dam was closed September 9, 1913, at 6:05 P. M., thereafter influencing the flow by storage and waste.

There remains an effective drainage area of 111 square miles above this station, when no water is being wasted from the three points of diversion.

The square miles used above are the result of a joint determination of drainage areas based on independent computations by the engineers of the Board of Water Supply of the city of New York and of the Department of State Engineer.

For the Board of Water Supply records for the years 1907 to 1912, inclusive, the drainage area was called 378 square miles (does not include Saw kill and Plattekill creek diversions), based on published records at Kingston.

Records available.— April 4, 1907, to April 16, 1918, when the station was discontinued.

Gage.— Standard Board of Water Supply chain gage read twice daily. Staff gage for low flows.

Discharge measurements.— At low stages, wading measurements are made at point about 3/4 mile above bridge, where bottom is sandy with no gravel. At high stages, from bridge.

Control.— Bed of stream mostly ledge-rock, with strata steeply inclined, giving jagged corners and a very irregular cross-section. Channel above bridge station straight for about 1,000 feet; water sluggish except in high stage. Channel below station straight for about 700 feet; swift at a distance of about 600 feet below station, where rift is located. Right bank about 40 feet high, steep and wooded. Left bank about 100 feet high, steep and rocky for about 40 feet above stream bed, and then wooded.

Extremes of discharge.— Current period: Maximum stage recorded, 16.65 feet on February 21 at 8:00 A. M.; discharge, 4,340 second-feet. Minimum stage recorded, 10.50 feet on January 5, 6 and 7; discharge, 26 second-feet (ice conditions).

From April 4, 1907, to September 9, 1913 (closing of conduit in Olive Bridge dam), maximum discharge observed was 28,000 second-feet on April 26, 1910, at 1:30 P. M.; maximum stage, 25.10 feet. Minimum discharge for this period was 27 second-feet on September 1, 1907, for minimum stage of 10.45 feet.

Since the impounding of water in the Ashokan reservoir (September 9, 1913), up to April 6, 1918, when gagings at this station were discontinued, the maximum discharge of 10,396 second-feet for a stage of 19.22 feet occurred on February 25, 1915, at 8 A. M. Minimum stage for this period, 10.50 feet on October 18, 1916, and January 5, 6 and 7, 1918 (ice conditions); discharge, 26 second-feet.*

Winter flow.— Discharge relation affected by ice. Flow determined by meter measurements and climatological data.

Diversion.— For Kingston and Saugerties water-supplies see drainage area above.

Regulation.— Affected by storage and waste from Ashokan reservoir at Brown's Station, capacity, 132 billion gallons.

Accuracy.— Discharge rating curve fairly well defined. Soundings for measurements at bridge, on account of irregular cross-section, are computed from standard cross-section.

Coöperation.— Established and maintained by the Board of Water Supply of the city of New York.

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*See note at bottom of page 332, Report of State Engineer and Surveyor for 1916, Vol. II.

Daily discharge, in second-feet, of ESOPUS CREEK AT MOUNT MARION, for the year ended June 30, 1918. John Sauer, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April
1	342	71	209	38	714	237	41	96	2,468	291
2	285	61	154	38	471	259	35	90	1,508	291
3	190	59	118	*38	359	217	32	90	1,210	291
4	150	55	102	38	265	203	29	90	957	275
5	133	55	92	38	225	198	26	90	797	275
6	124	55	81	38	182	177	26	90	983	†[illegible]
7	124	53	71	35	166	133	26	79	1,135	......
8	112	51	69	35	154	114	29	79	785	......
9	102	51	61	35	133	102	35	79	696	......
10	108	51	51	32	124	92	47	74	905	......
11	137	47	51	32	108	88	*41	74	755	......
12	253	44	51	*32	102	77	90	90	725	......
13	231	44	51	35	96	69	437	154	725	......
14	166	*44	51	*35	90	67	378	275	970	......
15	137	47	47	35	90	69	342	502	1,035	......
16	144	64	44	41	84	69	325	875	725	......
17	133	77	44	41	79	79	291	845	725	......
18	133	67	41	41	79	79	259	725	970	......
19	137	55	*44	38	74	74	231	670	983	......
20	182	55	44	38	74	74	190	1,450	1,035	......
21	137	51	44	38	74	69	166	3,920	1,035	......
22	595	51	44	38	79	69	144	2,402	957	......
23	378	51	41	44	166	64	124	1,670	833	......
24	287	51	41	47	209	64	114	1,290	698	......
25	166	81	41	502	159	64	114	1,210	580	......
26	129	77	39	259	114	59	108	2,840	469	......
27	112	67	38	217	96	59	108	2,624	405	......
28	100	59	38	253	114	55	102	2,080	359	......
29	96	71	38	225	108	51	102	......	325	......
30	88	645	38	1,394	106	51	96	......	308	......
31	*77	352	......	1,314	......	47	96	......	291	......
Mean	175	86	63	163	163	101	135	877	854	......

* Meter measurement. † Station discontinued on April 6.

NOTE.— Ice conditions, December 7 to February 20, inclusive; flow based on meter measurements and climatological data.

Monthly discharge of ESOPUS CREEK AT MOUNT MARION, for the year ended June 30, 1918

[Drainage area, *see* station description]

MONTH	DISCHARGE IN SECOND-FEET		
	Maximum	Minimum	Mean
July	595	77	175
August	645	44	86
September	209	38	63
October	1,394	32	163
November	714	74	163
December	259	47	101
January	437	26	135
February	3,920	74	877
March	2,468	291	854
April	†	....	....

† Station record discontinued April 6.

DESCRIPTION

Rondout creek has its source in the heart of the timber-covered mountain group forming Wittenberg chain. It flows southeasterly to Napanoch, where it encounters the foot of Shawangunk range, turns abruptly to the northeast and enters the Hudson river at Rondout. Its watershed on the south is very restricted, as it is separated from the Wallkill river by only the narrow Shawangunk ridge. Notable waterfalls occur at Honk falls and Napanoch over Hudson river shale, and on Good Beer kill above Ellenville. At Honk falls a natural declivity afforded a fall of 125 feet, which has been increased to 147.5 feet by the construction of a masonry dam at the head of the gorge. On Good Beer kill there is a total fall of 870 feet from the Cape, 3 miles above Ellenville, to Ellenville. Of this about 200 feet are concentrated in a series of cascades, called Hanging Rock falls.

Water-power was originally developed at Napanoch in 1754. There is in this village a total fall of 115 feet. A series of cascades, involving a descent of about 50 feet, occurs at High Falls, where the water flows over Rosendale cement rock.

Drainage areas of RONDOUT CREEK *
(From U. S. G. S. topographic maps)

LIMITS	AREA IN SQUARE MILES	
	Place to place	Total
Source to Lackawack dam site, at Lackawack	94.73	94.73
Lackawack dam site to Lackawack gage, at Wilbur's bridge	5.63	100.36
Lackawack gage to Honk falls, about 1 mile above Napanoch	1.68	102.04
Honk falls to Alligerville, at highway bridge (including Vernooy)	243.78	345.82
Alligerville to High Falls, at High Falls dam	19.31	365.13
High Falls to Rosendale, at highway bridge	21.17	386.30

* This table is the result of a joint determination of drainage areas, based on independent computations by the engineers of the Board of Water Supply of the city of New York and of the Department of State Engineer.

RONDOUT CREEK AT LACKAWACK

Location.—At highway bridge, known as Wilbur's bridge, about 3 miles from Lackawack on road to Napanoch (reached by Ontario and Western railroad from Kingston to Napanoch and then a distance of 4 miles by Grahamsville stage).

Drainage area.— 100 square miles,* determined from U. S. G. S. topographic maps and by special survey of part of watershed line by Board of Water Supply. (1910–1912, inclusive, drainage area considered 104 square miles, based on incomplete data.)

Records available.— May 1, 1910, to June 30, 1918. (Honk falls† records available, February 13, 1906, to April 30, 1910, inclusive.)

Gage.— Standard Board of Water Supply chain gage and Friez automatic stage register, read twice daily.

Discharge measurements.—At high stages, from highway bridge. At low stages, by wading at a point about a mile below Wilbur's bridge, where bottom is gravelly.

Control.— Sandy bottom from Sta. 0 to 45. Station 45 to 85 strewn with boulders. Section apparently permanent. Clear span, 85 feet. Channel above station straight for about 3,000 feet; water swift. Channel below station straight for about 1,000 feet; water swift. Right bank high, wooded. Left bank high, clean.

Extremes of discharge.— Current year: Maximum stage recorded, 7.50 feet on October 30 at 4:30 P. M.; discharge, 3,800 second-feet. Minimum stage recorded, 2.35 feet on February 11; discharge, 29 second-feet (ice conditions).

1910–1918: Maximum stage recorded, 10.40 feet on November 9, 1913, at 7:30 P. M.; discharge, 14,000 second-feet. Minimum stage recorded, 2.07 feet on October 8, 1914; discharge, 14 second-feet.

Winter flow.— Discharge relation seriously affected by ice when channel is completely frozen over. Flow determined by meter measurements and climatological data.

Accuracy.— Discharge rating curve well defined.

Coöperation.— Established and maintained by Board of Water Supply of the city of New York. Climatological observations are made at this station.

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* The 100 square miles used above is checked by the result of a joint determination of drainage areas, based on independent computations by engineers of the Board of Water Supply of the city of New York and of the Department of State Engineer.

† Honk falls is a short distance below this station.

Daily discharge, in second-feet, of RONDOUT CREEK AT LACKAWACK, for the year ended June 30, 1918. Frank J. Thonemann, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	156	101	297	55	581	216	84	35	862	348	306	132
2	175	100	264	*44	402	196	81	33	536	402	240	113
3	169	98	220	44	316	156	78	31	470	384	208	93
4	140	81	177	50	259	149	75	31	444	359	201	87
5	129	66	150	62	228	141	73	30	384	300	199	89
6	122	64	140	64	211	132	72	29	1,490	270	187	90
7	*119	68	132	52	192	121	84	33	800	225	175	116
8	111	64	134	51	177	117	78	31	560	230	167	103
9	108	79	136	50	169	116	75	31	422	*654	156	85
10	196	111	122	48	158	113	71	30	576	507	150	84
11	638	72	113	45	149	109	68	29	536	402	143	81
12	517	62	111	64	141	108	*78	33	366	359	132	124
13	440	62	103	117	132	117	87	44	422	345	145	111
14	329	*58	95	78	131	136	79	58	395	406	248	90
15	359	84	87	72	127	125	75	72	384	462	*165	76
16	366	167	84	75	124	119	71	58	422	431	141	72
17	270	196	78	64	121	117	68	50	402	*410	129	64
18	246	108	72	55	119	116	64	44	444	546	121	59
19	218	92	62	47	116	114	61	466	586	410	116	52
20	190	85	65	114	*109	116	58	1,845	716	342	134	*47
21	175	87	58	90	116	*129	55	638	830	690	125	42
22	177	124	57	75	211	121	54	388	1,066	926	122	246
23	167	93	52	65	313	116	51	395	926	638	124	114
24	173	335	50	183	213	122	50	326	716	502	111	81
25	158	218	48	316	171	117	48	332	612	398	111	69
26	145	175	52	173	149	111	45	1,685	536	345	169	62
27	143	145	44	145	136	108	43	664	422	303	156	55
28	129	122	50	223	140	103	40	488	348	267	129	51
29	117	181	51	177	136	98	39	......	300	251	108	*55
30	145	669	48	1,301	134	92	38	......	300	290	132	52
31	114	422	......	1,081	......	87	37	......	332	......	152	......
Mean	214	142	105	164	189	124	64	283	568	413	158	86

* Meter measurement.

NOTE.— Ice conditions, December 7 to February 18, inclusive; flow based on meter measurements and climatological data.

Monthly discharge of RONDOUT CREEK AT LACKAWACK, for the year ended June 30, 1918

[Drainage area, 100 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	638	108	214	2.14	2.468
August	669	58	142	1.42	1.632
September	297	44	105	1.05	1.171
October	1,301	44	164	1.64	1.889
November	581	109	189	1.89	2.111
December	216	87	124	1.24	1.426
January	87	37	64	0.64	0.736
February	1,845	29	283	2.83	2.951
March	1,490	300	568	5.68	6.548
April	926	225	413	4.13	4.610
May	306	108	158	1.58	1.821
June	246	42	86	0.86	0.966
The year	1,845	29	*209	*2.09	*28.329

* Computed by State Engineer.

RONDOUT CREEK AT ROSENDALE

Location.— Rosendale highway bridge, downstream side. Reached by Wallkill Valley railroad from Kingston.

Drainage area.— 386 square miles,* determined from U. S. G. S. topographic maps and by special survey of part of watershed line by Board of Water Supply. (1907 to 1912, inclusive, area considered 380 square miles, based on government records for year 1903.)

Records available.— January 1, 1907, to June 30, 1918.†

Gage.—Standard Board of Water Supply chain gage, read twice daily.

Discharge measurements.— At high stages, from highway bridge. At low stages, by wading at point about 1 mile below bridge, where river bed is gravelly.

Control.— River bed smooth, ledge-rock bottom. Clear span of 136 feet. Channel above and below station straight for about 300 feet. Banks high, rocky and slightly wooded, not liable to overflow.

Extremes of discharge.— Current year: Maximum stage recorded, 17.20 feet on February 20 at 12:30 P. M.; discharge, 15,500 second-feet. Minimum stage recorded, 6.00 feet on October 9 and 12; discharge, 48 second-feet.

1907–1918: Maximum stage recorded, 18.57 feet on April 26, 1910, at 4:30 P. M.; discharge, 21,600 second-feet. Minimum stage recorded, 5.77 feet on August 30 and September 1 to 3, 1907; discharge, 20 second-feet.

Winter flow.— Discharge relation seriously affected by ice. Flow determined by meter measurements and climatological data.

Diversion.— The Delaware and Hudson canal, which is abandoned above High Falls, draws its supply of water from the natural flow of Rondout creek at a point above Rosendale. A 3-foot staff gage is read at Rock Locks when water of Delaware and Hudson canal is discharged through rock channel, 3.4 feet wide, formed by masonry wall of lock near entrance and left bank wall. Stop-planks are placed to form weir, and discharge is computed by weir formula and added to Rosendale bridge discharge for final record. From time to time measurements are made to check weir discharge. Canal is operated only during summer months, on a small scale.

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* The 386 square miles used above is checked by the result of a joint determination of drainage areas, based on independent computations by the engineers of the Board of Water Supply of the city of New York and of the Department of State Engineer.

† Established July 6, 1901, by the United States Geological Survey in coöperation with the New York City Water Supply Departments and taken over by the Board of Water Supply, June 1, 1907.

Regulation.—At Honk falls dam, above Napanoch, and at High Falls, where power-houses are located, operations affect the natural flow of the creek.

Accuracy.—Discharge rating curve fairly well defined.

Coöperation.—Maintained by Board of Water Supply of the city of New York. Climatological observations are made at this station.

Daily discharge, in second-feet, of RONDOUT CREEK AT ROSENDALE, for the year ended June 30, 1918. Edward J. Huben, Observer

DAY	July†	Aug.†	Sept.†	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April†	May†	June†
1.....	409	199	502	93	1,445	610	229	100	2,926	868	1,345	426
2.....	409	205	482	93	1,024	751	213	98	2,686	923	*970	314
3.....	379	177	388	*88	759	530	202	95	2,326	946	798	256
4.....	338	190	284	95	578	454	192	93	2,104	1,040	703	263
5.....	279	175	263	103	513	505	188	90	2,093	784	685	269
6.....	228	139	217	124	463	420	183	88	3,388	726	602	227
7.....	*223	177	219	100	428	437	224	117	3,674	634	567	290
8.....	219	165	232	85	386	411	202	109	2,566	586	492	309
9.....	218	167	220	63	318	402	192	103	1,917	717	475	247
10.....	315	163	215	85	229	394	183	98	2,254	*1,445	384	180
11.....	786	165	153	71	291	386	174	98	1,675	1,220	410	226
12.....	1,748	140	171	85	253	370	229	117	1,400	1,168	365	205
13.....	1,073	163	171	*178	253	362	325	139	1,292	1,168	379	357
14.....	762	*129	149	146	259	446	291	165	1,545	1,400	1,389	266
15.....	1,058	149	148	139	253	402	253	213	1,072	1,961	828	223
16.....	1,052	260	153	161	247	370	235	188	1,064	1,695	609	208
17.....	757	419	138	139	197	347	218	165	1,445	1,418	467	188
18.....	702	292	145	111	197	325	202	156	2,005	1,983	413	258
19.....	717	150	†153	121	202	311	192	1,745	2,060	1,515	348	158
20.....	591	137	153	195	202	298	183	8,400	2,614	1,152	341	*205
21.....	524	167	146	139	202	362	169	4,968	2,734	2,027	374	339
22.....	500	207	85	124	394	347	160	3,726	3,130	3,544	747	338
23.....	430	200	117	146	*960	325	156	2,326	3,070	2,494	530	500
24.....	409	271	117	213	650	355	148	2,060	2,104	1,885	425	301
25.....	378	691	88	1,418	454	332	139	1,983	1,735	1,382	354	218
26.....	354	320	100	568	370	311	135	5,752	1,575	1,128	428	223
27.....	305	251	85	363	370	298	128	4,548	1,185	1,016	525	211
28.....	259	212	95	446	840	278	117	3,010	1,056	†888	424	274
29.....	215	284	88	644	253	265	114	......	930	896	338	171
30.....	270	1,099	93	r 2,650	265	259	109	......	930	1,036	326	156
31.....	223	864	......	2,974	......	247	103	......	884	......	449	......
Mean...	520	269	186	386	425	384	187	1,455	1,982	1,322	564	260

* Meter measurement. † Includes flow in D. & H. canal; water was let out of canal on September 19 and let into canal on April 28. *r* New rating curve in effect October 30, 1917.

NOTE.— Ice conditions, December 8 to February 20, inclusive; flow based on meter measurements and climatological data.

Monthly discharge of RONDOUT CREEK AT ROSENDALE, for the year ended June 30, 1918

[Drainage area, 386 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	1,748	215	520	1.35	1.549
August	1,099	129	269	0.70	0.799
September	502	85	186	0.48	0.532
October	2,974	63	386	1.00	1.152
November	1,445	197	425	1.10	1.229
December	751	247	384	0.99	1.149
January	325	103	187	0.48	0.554
February	8,400	88	1,455	3.77	3.922
March	3,674	884	1,982	5.13	5.915
April	3,544	586	1,322	3.42	3.816
May	1,389	326	564	1.46	1.686
June	500	156	260	0.67	0.751
The year	8,400	63	*656	*1.70	*23.054

* Computed by State Engineer.

DELAWARE RIVER DRAINAGE BASIN

DELAWARE RIVER

DESCRIPTION

The headwaters of Delaware river are found in Delaware, Greene and Schoharie counties. The East branch, which may be considered the main stream, rises at Grand Gorge in northeastern Delaware county; the West branch has its source in a small lake almost on the line of Schoharie and Delaware counties, at an elevation of 1,886 feet above sea-level; the two streams unite at Hancock, forming what is referred to as the Delaware river, while above this point the two branches are designated as East or West branch, Delaware river. From this junction point the river flows southeastward until it reaches Port Jervis, where it turns to the southwest and flows for a distance of about 40 miles along the base of the Shawangunk range until it passes through the water gap, from which point it flows in an irregular southerly direction to Trenton, N. J. Below Trenton its course is in general southwestward to Delaware bay. Between Hancock and Port Jervis it forms the dividing line between New York and Pennsylvania; south of Port Jervis at separates Pennsylvania from New Jersey and, for a few miles, Delaware from New Jersey.

The drainage area of Delaware river, measured at Philadelphia Pa., and including that of Schuylkill river, is about 10,100 square miles, of which about 2,580 square miles lie in New York, 5,720 in Pennsylvania, and 1,800 in New Jersey. The river is tidal to Trenton, which lies also at the head of navigation.

The Delaware receives a number of important tributaries, among which may be mentioned Mongaup and Neversink rivers and Callicoon creek from New York; Lackawaxen, Lehigh and Schuylkill rivers and numerous creeks from Pennsylvania; and Rancocas creek, Musconetcong river and Maurice river from New Jersey.

EAST BRANCH OF DELAWARE RIVER AT FISH EDDY

Location.—At the railway bridge in the village of Fish Eddy, Delaware county, about 4 miles below the mouth of Beaver kill and 5½ miles above the confluence of East and West branches.

Drainage area.— 790 square miles. (Measured on post-route map.)

Records available.— November 19, 1912, to June 30, 1918. Records were obtained at Hancock, about 4 miles below, from October 14, 1902, to December 31, 1912.

Gage.— Staff in two sections on downstream and on left pier of railroad bridge; read by J. P. Lyons.

Discharge measurements.— Made from the highway bridge about 200 feet above the gage or by wading.

Channel and control.— Coarse gravel; occasionally shifting.

Extremes of discharge.— Current year: Maximum stage recorded, 17.0 feet at 10 A. M., February 20; stage-discharge relation affected by ice, discharge not computed. Minimum stage recorded, 2.1 feet several times in September and October; discharge, 262 second-feet.

1912–1918: Maximum stage, 17.4 feet during the afternoon of March 27, 1913, determined by leveling from flood-marks; discharge, about 33,500 second-feet. Minimum stage recorded, 1.64 feet at 5 P. M., October 12, 14 and 15, 1914; discharge, 97 second-feet.

Ice.— Stage-discharge relation seriously affected by ice.

Accuracy.— Stage-discharge relation apparently permanent except for two or three months immediately following the spring flood. Affected by ice during a large part of the period from December to March, inclusive. Rating curve well defined between 200 and 20,000 second-feet. Gage read to tenths once daily from July 1 to September 30 and to half-tenths twice daily from October 1 to June 30. Daily discharge ascertained by applying mean daily gage height to rating table. Results good except for periods when the stage-discharge relation was affected by ice, when results were fair.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the U. S. Weather Bureau and the State Engineer and Surveyor.

Discharge measurements of EAST BRANCH OF DELAWARE RIVER AT FISH EDDY, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Oct. 15	E. D. Burchard	2.95	702
Dec. 20 *a*	C. C. Covert	4.92	590
1918			
Jan. 14 *b*	C. C. Covert	3.85	456
Feb. 9 *a*	E. D. Burchard	3.50	250
Mar. 9	E. D. Burchard	5.13	2,670
June 5	E. D. Burchard and J. W. Moulton	3.55	1,120

a Measurement made through partial ice cover.
b Measurement made through complete ice cover.

Daily discharge, in second-feet, of EAST BRANCH OF DELAWARE RIVER AT FISH EDDY, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	3,320	590	1,500	300	7,360	1,080	360	340	4,560	2,210	2,210	2,210
2	3,050	505	1,320	300	5,620	1,080	340	340	4,390	2,210	2,100	1,890
3	2,550	480	1,160	300	3,910	1,000	320	340	4,390	2,100	1,410	1,590
4	2,210	408	1,000	300	3,760	1,000	360	300	4,390	2,100	1,160	1,320
5	1,690	385	920	408	3,760	1,080	300	280	3,610	2,100	1,160	1,160
6	1,590	385	745	320	3,460	1,160	300	260	3,760	1,990	1,160	920
7	1,500	385	710	300	2,430	1,160	300	220	3,610	1,990	1,160	850
8	1,410	385	745	300	1,690	1,160	300	240	3,320	1,990	1,160	850
9	1,240	505	710	300	1,500	1,160	300	280	2,920	2,920	1,000	780
10	1,500	1,320	710	281	1,160	1,200	300	220	3,050	3,460	1,000	745
11	2,550	710	680	920	1,080	1,100	300	200	2,550	2,920	920	1,590
12	3,050	590	650	1,690	1,080	1,000	340	220	2,320	2,790	920	2,430
13	2,550	590	650	1,320	1,000	1,000	400	300	2,820	3,050	1,000	1,790
14	1,990	530	560	960	920	900	550	500	3,050	3,320	1,160	1,240
15	2,100	505	480	710	850	900	500	1,000	2,790	3,320	1,500	1,160
16	2,100	1,160	480	650	780	800	440	3,400	2,320	3,910	1,320	1,040
17	1,590	1,890	430	590	780	750	460	2,400	2,320	4,730	1,240	850
18	1,160	1,160	430	590	780	650	440	1,500	3,460	4,900	1,080	780
19	1,040	1,000	408	650	650	600	480	1,060	3,610	5,620	1,080	710
20	1,000	815	362	2,100	590	550	420	5,500	5,620	5,620	2,210	710
21	1,000	650	300	1,790	590	550	400	4,900	6,090	5,810	1,500	710
22	1,000	530	300	1,590	710	500	440	3,760	7,970	6,000	1,320	1,320
23	920	480	300	1,240	2,320	500	420	2,790	7,780	5,440	1,320	1,160
24	920	2,100	262	1,080	1,890	500	440	2,550	7,160	4,900	1,240	1,040
25	920	2,320	262	3,910	1,790	500	340	2,430	7,160	4,230	1,160	960
26	920	1,590	262	2,920	1,690	480	320	2,550	6,880	3,460	2,100	780
27	780	1,160	262	2,790	1,500	440	320	2,670	4,070	2,920	2,670	710
28	680	1,080	262	4,560	1,160	380	360	3,610	2,790	2,550	2,550	710
29	680	4,070	300	3,050	1,160	380	360	......	2,480	2,320	2,820	590
30	1,160	2,210	300	17,500	885	380	340	......	2,320	2,100	2,100	530
31	710	1,890	......	14,500	......	380	360	......	2,320	......	2,320	......
Mean	1,580	1,040	582	2,200	1,990	785	373	1,580	4,020	3,430	1,500	1,100

NOTE.— Discharge, December 10 to February 20, estimated, because of ice, from discharge measurements, weather records, study of gage-height graph and comparison with similar studies for Cooks Falls and Hale Eddy.

Monthly discharge of EAST BRANCH OF DELAWARE RIVER AT FISH EDDY, for the year ended June 30, 1918

[Drainage area, 790 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	3,320	680	1,580	2.00	2.31
August	4,070	385	1,040	1.32	1.52
September	1,500	262	582	0.736	0.82
October	14,500	281	2,200	2.79	3.22
November	7,360	590	1,900	2.41	2.69
December	1,200	380	785	0.994	1.15
January	550	300	373	0.472	0.54
February	5,500	200	1,580	2.00	2.08
March	7,970	2,320	4,020	5.09	5.87
April	6,000	1,990	3,430	4.34	4.84
May	2,670	920	1,500	1.90	2.19
June	2,430	530	1,100	1.39	1.55
The year	14,500	200	1,670	2.11	28.78

DELAWARE RIVER AT PORT JERVIS

Location.—At the toll bridge at Port Jervis, Orange county, 1 mile above Neversink river and 6 miles below Mongaup river.

Drainage area.— 3,250 square miles.

Records available.— October 12, 1904, to June 30, 1918.

Gage.— Staff, in two sections, the lower section inclined, about 30 feet downstream, from left abutment of bridge; the upper section vertical and attached to downstream end of left abutment. Prior to June 20, 1914, a chain gage on the bridge was used; read by John Bisland.

Discharge measurements.— Made from the highway bridge or by wading.

Channel and control.— Gravel; occasionally shifting.

Extremes of discharge.— Current year: Maximum stage recorded, 12.3 feet at 8 A. M., October 31st; discharge, 61,600 second-feet. Minimum stage recorded, 1.5 feet at 8 A. M., October 1, 2 and 3; discharge, 685 second-feet.

1904–1918: Maximum stage recorded, 16.0 feet at 8 A. M., March 28, 1914; discharge, 92,700 second-feet. Minimum stage recorded, 0.60 foot at 8 A. M., September 22 and 23, 1908; discharge, 175 second-feet.

Ice.— Stage-discharge relation somewhat affected by ice.

Accuracy.— Stage-discharge relation practically permanent between dates of shifting; affected by ice during large part of January and February. Rating curve well defined between 1,000 and 8,000 second-feet. Probably coincides with other well-defined curves outside these limits. Gage read to tenths once daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good for periods when the stage-discharge relation is not affected by ice and fairly good for other periods.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the U. S. Weather Bureau and the State Engineer and Surveyor.

Discharge measurements of DELAWARE RIVER AT PORT JERVIS, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Oct. 17	E. D. Burchard	2.37	1,800
1918			
Feb. 8 [a]	C. C. Covert	3.19	1,170
Mar. 12	E. D. Burchard	4.82	9,450
Mar. 12	E. D. Burchard	4.80	9,540
June 8	J. W. Moulton	3.10	3,330

[a] Measurement made through partial ice cover.

Daily discharge, in second-feet, of DELAWARE RIVER AT PORT JERVIS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	9,840	......	4,460	685	33,500	2,920	1,200	1,200	14,100	6,700	7,810	7,060
2	8,200	2,260	3,160	685	19,200	3,160	1,200	1,100	28,200	7,430	7,060	6,700
3	7,060	1,890	2,690	685	13,100	3,160	1,200	1,000	16,600	8,200	6,700	5,360
4	6,010	1,550	2,470	990	10,300	3,160	1,200	1,000	14,100	9,010	5,680	3,910
5	5,360	1,720	2,260	780	8,200	2,920	1,200	1,000	11,600	8,600	5,360	3,910
6	4,750	1,550	2,070	780	7,060	2,470	1,000	1,000	11,600	8,200	5,050	3,650
7	4,460	1,890	1,890	880	6,010	2,070	1,000	1,000	20,500	6,010	4,750	3,650
8	3,910	1,550	1,720	990	5,680	1,720	950	1,200	14,100	5,360	4,460	3,400
9	3,400	1,390	1,720	1,110	4,750	1,390	1,200	1,200	11,600	5,050	3,650	3,650
10	3,650	3,400	1,550	990	3,910	1,720	1,300	1,200	10,300	9,840	3,400	2,920
11	5,360	4,460	1,550	880	3,910	2,070	1,300	1,200	12,100	10,300	3,160	2,470
12	7,430	4,180	1,550	780	3,650	2,920	1,400	1,000	9,010	9,010	2,920	2,690
13	8,600	3,160	1,390	1,110	3,160	2,690	1,600	1,200	7,810	8,600	4,460	3,160
14	7,060	2,470	1,240	3,650	2,920	2,470	1,600	1,600	14,100	8,200	7,430	5,360
15	5,680	1,890	1,110	2,470	2,690	2,260	1,700	2,400	15,100	13,100	6,350	4,180
16	5,360	1,720	1,110	2,070	2,690	2,000	1,700	3,600	12,100	16,200	5,050	3,650
17	4,750	1,550	990	1,890	2,690	2,000	1,900	8,500	11,200	14,100	4,460	2,920
18	5,680	1,890	990	1,890	2,470	1,900	1,500	8,000	15,100	15,100	3,910	2,470
19	4,460	2,470	990	1,720	2,260	1,700	1,500	7,000	16,200	16,800	3,650	2,260
20	4,180	2,920	990	1,720	2,260	1,600	1,300	11,600	18,600	13,600	3,650	2,070
21	3,650	2,260	880	4,460	2,070	1,600	1,200	35,000	20,500	11,600	6,010	1,890
22	3,400	1,890	880	3,910	2,070	1,600	1,000	29,000	21,800	19,200	5,360	2,070
23	2,920	1,720	880	3,400	4,460	1,600	1,000	15,100	23,900	21,200	5,360	5,360
24	3,160	1,550	880	2,920	4,180	1,600	1,600	10,700	19,800	16,200	4,750	4,460
25	3,160	1,720	880	4,460	3,650	1,700	1,500	8,200	15,100	13,600	3,910	3,400
26	3,650	3,910	880	9,010	3,400	1,600	1,200	8,600	13,100	11,200	3,910	2,920
27	3,160	4,750	780	7,060	3,160	1,700	1,200	35,000	11,200	9,010	4,460	2,470
28	3,160	3,650	780	6,010	2,920	1,600	1,100	24,600	9,010	7,810	6,010	2,070
29	2,690	2,920	780	7,060	2,690	1,500	1,100	......	7,430	6,700	6,010	1,890
30	2,260	2,260	780	9,420	2,470	1,400	1,100	......	7,060	6,350	6,010	1,720
31	2,070	2,070	......	61,600	......	1,300	1,100	......	6,700	......	8,200	......
Mean	4,790	2,520	1,480	4,710	5,720	2,030	1,290	7,980	14,200	10,700	5,130	3,460

NOTE.— Discharge, December 10 to February 19, estimated, because of ice, from discharge measurements, weather records, study of gage-height graph and similar estimates for Hale Eddy and Fish Eddy.

Monthly discharge of DELAWARE RIVER AT PORT JERVIS, for the year ended June 30, 1918

[Drainage area, 3,250 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	9,840	2,070	4,790	1.47	1.70
August	4,460	1,390	2,520	0.776	0.89
September	4,460	780	1,480	0.456	0.51
October	61,600	685	4,710	1.45	1.67
November	33,500	2,070	5,720	1.76	1.96
December	3,160	1,300	2,030	0.624	0.72
January	1,900	950	1,290	0.397	0.46
February	35,000	1,000	7,980	2.45	2.55
March	28,200	6,700	14,200	4.38	5.05
April	21,200	5,050	10,700	3.30	3.68
May	8,200	2,920	5,130	1.58	1.82
June	7,060	1,720	3,460	1.06	1.18
The year	61,600	685	5,320	1.64	22.19

BEAVER KILL

BEAVER KILL AT COOKS FALLS

Location.— At the covered highway bridge in Cooks Falls, Delaware county.

Drainage area.— 236 square miles. (Measured on post-route and U. S. Geological Survey topographic maps.)

Records available.— July 25, 1913, to June 30, 1918.

Gage.— Vertical staff in two sections bolted to rock on left bank under the bridge; read by Ralph Rosa and H. B. Couch.

Discharge measurements.— Made from the bridge or by wading a short distance downstream.

Channel and control.— Coarse gravel, boulders and solid ledge; practically permanent.

Extremes of discharge.— Current year: Maximum stage, 12.4 feet at 5 P. M. on October 30; discharge, about 9,700 second-feet. Minimum stage recorded, 1.3 foot several times in September; discharge, 114 second-feet.

1913–1918: Maximum stage, 12.4 at 5 P. M. on October 30, 1917; discharge, about 9,700 second-feet. Minimum stage recorded, 0.70 foot from 7 A. M., October 12, to 7 A. M., October 13, 1916; discharge, 30 second-feet.

Ice.— Stage-discharge relation affected by ice.

Accuracy.—Stage-discharge relation practically permanent; affected by ice during portions of the period from December to March, inclusive. Rating curve well defined between 50 and 4,500 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good for periods when the stage-discharge is not affected by ice; fair for other periods.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Engineer and Surveyor.

Discharge measurements of BEAVER KILL AT COOKS FALLS, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Oct. 16	E. D. Burchard	2.32	366
Nov. 22	C. C. Covert	2.05	270
Dec. 20 *a*	C. C. Covert	2.20	201
1918			
Jan. 14	C. C. Covert	3.10	207
Feb. 9 *b*	E D. Burchard	2.28	107
Mar. 11	E. D. Burchard	3.39	820
June 7	J. W. Moulton	2.32	316

a Measurement made through complete ice cover
b Measurement made through partial ice cover.

Daily discharge, in second-feet, of BEAVER KILL AT COOKS FALLS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	755	232	805	186	1,730	371	200	130	......	1,330	805	455
2	1,200	232	530	186	1,400	355	190	130	......	1,800	705	371
3	910	256	455	175	1,080	355	190	120	......	1,800	615	325
4	615	244	455	244	805	325	190	120	......	1,940	570	296
5	530	232	371	269	705	310	190	120	......	1,260	530	296
6	455	232	296	208	615	282	190	110	......	1,020	490	269
7	387	220	256	186	282	256	200	110	......	910	455	355
8	355	232	256	175	404	244	190	110	......	805	371	325
9	660	660	256	220	325	232	190	110	805	1,400	355	256
10	2,720	455	269	164	310	220	200	110	830	1,460	355	256
11	3,310	387	256	154	296	200	200	......	805	1,260	355	232
12	2,960	244	232	310	282	200	200	......	755	1,080	340	355
13	1,870	208	208	244	296	200	200	......	855	910	355	340
14	805	186	186	340	296	200	200	......	1,020	1,020	1,020	282
15	615	175	175	355	296	200	200	......	755	1,330	660	256
16	530	910	164	310	269	190	200	......	705	1,400	490	220
17	530	1,140	164	256	282	200	200	......	855	1,200	455	208
18	530	530	144	232	325	200	200	......	1,260	1,940	420	197
19	530	355	134	232	310	200	200	......	1,730	1,400	387	197
20	455	310	124	530	296	200	190	......	2,240	1,080	387	175
21	420	282	114	490	282	200	180	......	2,720	1,800	420	164
22	340	387	114	325	404	200	180	......	3,810	2,720	387	855
23	855	2,320	124	282	1,140	190	170	......	2,960	1,730	387	404
24	660	1,080	114	530	615	186	170	......	2,160	1,400	355	325
25	490	755	124	910	371	197	170	......	1,940	1,140	340	256
26	420	455	114	570	355	197	160	......	1,660	910	455	232
27	282	282	114	1,590	340	208	160	......	1,400	805	420	197
28	256	1,520	164	1,260	325	197	160	......	1,020	705	387	186
29	340	2,880	144	1,940	340	200	150	......	910	705	325	186
30	310	910	186	7,110	387	200	140	......	1,260	805	455	175
31	256	1,080	......	2,400	......	200	130	......	1,260	......	530	......
Mean	818	626	235	722	505	230	184	417	1,420	1,300	470	288

NOTE.— Discharge, December 11 to 23 and December 29 to February 10, estimated, because of ice, from discharge measurements, weather records, study of gage-height graph and comparison with similar studies for East branch, Delaware river, Fish Eddy. Mean discharge, February 11 to 28, inclusive, estimated as 584 second-feet. Mean discharge, March 1 to 8, estimated as 1,370 second-feet.

Monthly discharge of BEAVER KILL AT COOKS FALLS, for the year ended June 30, 1918

[Drainage area, 236 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	3,310	256	818	3.47	4.00
August	2,880	175	626	2.65	3.06
September	805	114	235	0.996	1.11
October	7,110	154	722	3.06	3.53
November	1,730	269	505	2.14	2.39
December	371	186	230	0.975	1.12
January	200	130	184	0.780	0.90
February	....	....	417	1.77	1.84
March	3,310	705	1,420	6.02	6.94
April	2,720	705	1,300	5.51	6.15
May	1,020	325	470	1.99	2.29
June	855	164	288	1.22	1.36
The year	7,110	114	604	2.56	34.69

WEST BRANCH, DELAWARE RIVER

A brief description of the West branch, Delaware river, will be found in the description of the Delaware river.

WEST BRANCH OF DELAWARE RIVER AT HALE EDDY

Location.—At the highway bridge in the village of Hale Eddy, Delaware county, 8 miles below the power dam of the Deposit Electric Co., and 8¼ miles above junction with the East branch of Delaware river.

Drainage area.—611 square miles. (Measured on post-route map.)

Records available.—November 15, 1912, to June 30, 1918. Records were obtained at Hancock, about 7 miles below, from October 13, 1902, to December 31, 1912.

Gage.—Vertical staff in four sections, attached to rocks near the right abutment of the bridge and to the abutment; read by William Seeley.

Discharge measurements.—Made from the cable installed in July, 1916, about 400 feet below the gage. Previous measurements made from the highway bridge or by wading.

Channel and control.—Coarse gravel and boulders; practically permanent.

Extremes of discharge.—Current year: Maximum stage recorded, 13.4 feet at 4 P. M., February 20; discharge not computed (stage-discharge relation probably affected by ice). Minimum stage recorded, 1.7 feet, September 29 and 30; discharge, 105 second-feet.

1913–1918: Maximum stage recorded, * 15.3 feet at 5 P. M., March 27, 1913; discharge, about 25,000 second-feet. Minimum stage recorded, 1.0 foot at 6 P. M., September 21, 1913; discharge, 34 second-feet.

Ice.—Stage-discharge relation seriously affected by ice.

Accuracy.—Stage-discharge relation practically permanent. Rating curve well defined between 300 and 18,000 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good during periods when the stage-discharge relation is not affected by ice. Results good for other periods.

Coöperation.—Station established and maintained by the United States Geological Survey in coöperation with the State Engineer and Surveyor.

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* The observer states that on October 10, 1893, the water rose to elevation indicated by a nail in a tree near the gage. The nail is at gage height 20.3 feet. No data available indicating whether the present rating is applicable to this gage height.

Discharge measurements of WEST BRANCH OF DELAWARE RIVER AT HALE EDDY, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Oct. 15	E. D. Burchard	2.81	484
Dec. 21*a*	C. C. Covert	3.14	225
1918			
Jan. 15 *a*	C. C. Covert	3.53	270
Feb. 9 *a*	C. C. Covert	3.20	212
Mar. 9	E. D. Burchard	4.72	1,850
Mar. 9	E. D. Burchard	4.71	1,860
June 5	J. W. Moulton	3.56	883
June 5	J. W. Moulton	3.58	875

a Measurement made through complete ice cover.

Daily discharge, in second-feet, of WEST BRANCH OF DELAWARE RIVER AT HALE EDDY, for the year ended June 30, 1918

DAY	Ju'y	Aug.	Sept.	Oct	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	1,870	410	720	135	5,900	580	100	260	7,650	1,260	1,180	1,580
2	2,620	410	605	155	3,800	605	100	240	4,960	1,580	1,180	1,180
3	2,050	365	530	130	2,670	455	120	240	3,800	1,850	1,110	1,110
4	1,510	388	432	170	2,140	455	170	240	3,540	1,940	900	1,040
5	1,420	285	365	250	1,760	410	85	240	2,560	1,580	900	900
6	1,240	285	325	325	1,420	388	40	240	4,080	1,260	780	840
7	1,000	285	325	325	1,260	325	90	220	4,660	1,260	780	900
8	855	232	325	305	1,110	305	110	220	3,030	1,110	780	1,940
9	720	432	530	200	970	300	130	220	1,940	1,850	660	840
10	855	720	365	232	840	300	130	220	1,940	2,240	555	720
11	1,000	530	285	215	780	300	160	240	1,760	1,940	530	605
12	1,870	365	250	250	720	300	360	300	1,580	1,940	505	2,560
13	1,160	305	285	1,110	660	280	260	420	2,790	1,940	1,110	2,340
14	1,160	285	250	720	555	280	260	800	2,670	1,940	1,940	1,420
15	785	388	215	505	555	260	280	1,300	2,140	3,150	1,760	970
16	720	388	250	555	480	260	280	2,000	1,760	3,030	1,340	970
17	720	388	200	480	455	240	280	2,400	1,760	2,560	1,110	840
18	660	480	200	365	455	240	280	2,400	2,790	2,340	900	840
19	855	410	185	365	410	240	260	2,600	3,280	2,560	840	605
20	855	325	155	1,500	410	240	260	2,600	3,540	2,340	1,340	505
21	855	268	185	1,180	410	220	280	2,600	4,360	2,340	2,040	505
22	855	285	185	720	480	240	280	2,560	4,660	3,030	1,670	1,850
23	605	268	185	720	900	240	280	2,670	3,030	2,910	1,940	1,420
24	580	530	170	900	840	300	280	2,670	2,560	2,340	1,580	1,040
25	1,160	1,330	142	2,340	480	200	280	2,910	2,840	2,140	1,260	840
26	785	660	142	2,140	388	300	260	10,900	2,040	1,850	1,580	665
27	605	505	155	1,340	345	300	260	3,800	1,760	1,580	1,850	605
28	530	410	142	2,140	432	200	260	3,540	1,760	1,420	2,140	505
29	480	345	130	1,940	505	170	260	......	1,420	1,180	2,040	455
30	720	720	105	11,600	455	150	260	......	1,260	1,180	2,140	455
31	555	925	......	12,800	......	90	260	......	1,180	......	1,850	......
Mean	1,020	449	278	1,490	1,090	296	217	1,750	2,860	1,990	1,300	1,000

NOTE.—Discharge, December 9 to February 21, estimated, because of ice, from discharge measurements, weather records, study of gage-height graph and comparison with similar studies for other stations on the Delaware river.

Monthly discharge of WEST BRANCH OF DELAWARE RIVER AT HALE EDDY, for the year ended June 30, 1918

[Drainage area, 611 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	2,620	555	1,020	1.67	1.93
August	1,330	232	449	0.735	0.85
September	720	105	278	0.455	0.51
October	12,800	130	1,490	2.44	2.81
November	5,900	345	1,090	1.78	1.99
December	605	90	296	0.484	0.56
January	360	40	217	0.355	0.41
February	10,900	220	1,750	2.86	2.98
March	7,650	1,180	2,860	4.68	5.40
April	3,150	1,110	1,990	3.26	3.64
May	2,140	505	1,300	2.13	2.46
June	2,560	455	1,000	1.64	1.83
The year	12,800	40	1,140	1.87	25.37

SUSQUEHANNA RIVER DRAINAGE BASIN

DESCRIPTION

Susquehanna river rises in Otsego lake, in northern Otsego county, at an elevation of 1,193 feet above tide, and flows in a general southerly direction into Chesapeake bay. Its course is in many places extremely tortuous, crossing the State boundary between New York and Pennsylvania three times. The entire length of the river is about 500 miles and it drains an area of 27,400 square miles, of which 21,060 square miles lie in Pennsylvania, 6,080 in New York and 260 in Maryland.

Three important streams contribute to the flow in New York state — Unadilla, Chenango and Chemung rivers. These streams all enter from the north. Unadilla, the smallest, joins the main stream near Sidney, Chenango at Binghamton and Chemung at a point in Pennsylvania about 8 miles below the state line.

The topography of the basin varies widely in character. In New York the stream and its tributaries flow through a rolling and, in places, rather broken country, bounded on the north by a mountainous area. In this part of its course its bed is of gravel or sand, with rock ledges here and there, and its banks are moderately high and not extensively subject to overflow. In Pennsylvania the river enters a mountain region, its banks are high and it winds and twists among the parallel ranges in a bed composed generally of drift materials, gravels, sand and boulders. In the lower part of its course, from Marietta, Pa., to Havre de Grace, Md., it occupies a broad, deep valley, ranging in width from a few hundred feet to more than a mile, and is for the most part bounded on either shore by rocky bluffs and table-lands elevated from 100 to 500 feet above its waters.

SUSQUEHANNA RIVER

SUSQUEHANNA RIVER AT CONKLIN

Location.—At the steel highway bridge, just below Conklin, Broome county, 5 miles below Big Snake creek and 8 miles above Chenango river.

Drainage area.— 2,350 square miles.

Records available.— November 13, 1912, to June 30, 1918. Records were obtained at Binghamton, 8 miles below, from July 31, 1901, to December 31, 1912.

Gage.— Stevens water-stage recorder on left bank, just below the bridge, installed October 4, 1914. Prior to that date, staff in two sections, the lower section inclined, the upper vertical, attached to left abutment. Water-stage recorder inspected by George W. Marvin.

Discharge measurements.— Made from the bridge or by wading.

Channel and control.— Coarse gravel and boulders; probably permanent.

Extremes of discharge.— Current year: Maximum stage from water-stage recorder, 14.43 feet at 5 P. M., February 21; stage-discharge relation affected by ice, maximum discharge probably occurred at gage height 12.87 feet at 10:30 A. M., March 1; discharge, 25,900 second-feet. Minimum stage from water-stage recorder, 2.4 feet at 7:20 A. M., September 29; discharge, 470 second-feet.

1901–1918: Maximum stage recorded, 19.74 feet at the former station in Binghamton at 7:40 A. M., March 2, 1902; discharge, about 62,500 second-feet. Minimum stage recorded, 1.32 feet at 8:20 A. M. and 4 P. M., September 16, 1913; discharge, 106 second feet.

Ice.— Stage-discharge relation affected by ice.

Accuracy.— Stage-discharge relation practically permanent; affected by ice for a large portion of the period from January to March, inclusive. Rating curve well defined between 250 and 55,000 second-feet. Operation of the water-stage recorder fairly satisfactory throughout year. Daily discharge ascertained by applying mean daily gage heights to rating table. Gage heights determined by inspecting gage height graph or by averaging hourly gage heights. Results good except for periods when the stage-discharge relation was affected by ice. Results fairly good for other periods.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Engineer and Surveyor.

Discharge measurements of SUSQUEHANNA RIVER AT CONKLIN, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1918		*Feet*	*Sec.-ft.*
Jan. 17 *a*	C. C. Covert	5.06	811
Feb. 11 *a*	C. C. Covert	4.25	959
Mar. 3 *b*	C. C. Covert	11.10	10,600
Mar. 8 *b*	E. D. Burchard	9.83	11,200
Mar. 19	C. C. Covert	8.45	11,000
April 26	C. C. Covert	6.12	5,740
June 4	J. W. Moulton	4.50	2,620

a Measurement made through complete ice cover.
b Measurement made through partial ice cover.

Daily discharge, in second-feet, of SUSQUEHANNA RIVER AT CONKLIN, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	8,760	2,210	1,750	506	8,280	1,700	900	800	12,000	4,840	5,170	5,380
2	8,280	1,880	1,520	500	6,860	1,800	900	800	11,000	5,170	5,720	4,140
3	9,500	1,750	1,880	470	5,380	1,600	850	800	9,000	5,720	5,170	3,330
4	7,330	2,070	1,520	506	4,640	1,700	850	950	7,000	6,860	4,530	2,750
5	5,940	1,750	1,280	537	3,860	1,600	800	950	5,500	6,170	4,230	2,360
6	4,640	1,520	1,150	726	3,500	1,500	800	1,000	7,000	4,640	3,770	2,210
7	3,860	1,400	1,050	1,010	3,160	1,400	750	850	10,000	3,950	3,500	2,510
8	2,670	1,350	1,080	1,030	2,830	1,300	750	900	11,000	3,590	3,240	2,950
9	3,420	3,590	1,150	1,020	2,590	1,100	700	900	8,500	4,930	2,990	3,680
10	2,990	7,240	1,350	938	2,360	1,200	800	950	8,000	7,100	2,590	2,590
11	2,830	5,560	1,180	810	2,360	1,200	700	950	8,000	6,680	2,440	2,280
12	3,860	3,240	1,060	1,060	2,510	1,200	700	1,600	7,500	5,720	2,280	4,650
13	4,640	2,280	946	1,520	2,510	1,200	650	1,600	7,000	5,380	5,460	5,220
14	3,860	2,360	882	2,140	2,360	1,200	700	2,400	12,600	6,570	13,700	4,430
15	4,230	1,940	810	2,000	2,070	1,200	700	6,500	13,000	11,500	10,500	3,420
16	5,720	1,880	747	1,750	1,350	1,100	750	8,500	10,000	12,800	6,860	2,750
17	5,720	2,910	754	2,070	1,610	1,100	750	10,000	8,500	10,500	4,840	2,280
18	4,950	2,360	691	1,810	1,810	1,100	750	9,500	9,500	10,800	3,950	2,000
19	5,060	1,810	649	1,690	1,810	1,100	800	8,000	12,600	10,500	3,330	1,680
20	6,700	1,460	600	3,330	1,750	1,100	800	6,500	14,000	8,280	3,080	1,520
21	6,860	1,300	600	4,580	1,880	1,100	850	6,500	15,500	6,860	6,130	1,350
22	5,720	1,150	579	3,680	1,810	1,100	850	6,500	16,800	9,500	5,280	2,880
23	4,530	1,060	530	2,990	2,990	1,100	850	6,500	16,100	11,300	5,720	3,950
24	4,040	1,570	500	3,640	3,500	1,100	800	6,500	13,100	9,740	4,740	3,420
25	3,240	1,860	518	6,860	2,910	1,100	800	7,000	10,200	8,280	3,590	2,590
26	3,590	2,800	512	6,170	2,210	1,100	800	7,500	8,760	6,860	4,640	2,140
27	2,830	1,520	500	4,840	1,940	1,100	800	8,000	7,560	5,720	7,330	1,750
28	2,360	1,210	506	5,500	1,750	1,000	900	9,500	6,400	5,060	7,330	1,460
29	2,280	1,180	506	6,860	1,690	1,000	850	......	5,380	4,330	5,280	1,330
30	2,280	1,630	500	20,400	1,700	1,060	750	......	4,980	4,580	7,500	1,250
31	2,990	2,070	......	28,000	......	950	700	......	4,840	......	6,170	......
Mean	4,760	2,170	910	3,840	2,870	1,230	782	4,350	9,680	7,130	5,200	2,860

NOTE.— Daily discharge, July 4 to 17, determined from semidaily observations on staff gage. Daily discharge, October 31 to November 10, estimated. Discharge, November 30 to March 20, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of SUSQUEHANNA RIVER AT CONKLIN, for the year ended June 30 1918

[Drainage area, 2,350 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	9,500	2,280	4,700	2.00	2.31
August	7,240	1,060	2,170	0.924	1.07
September	1,880	500	910	0.387	0.43
October	28,000	470	3,840	1.63	1.88
November	8,280	1,350	2,870	1.22	1.36
December	1,800	950	1,230	0.523	0.60
January	900	650	782	0.333	0.38
February	10,000	800	4,350	1.85	1.93
March	16,800	4,840	9,680	4.12	4.75
April	12,800	3,590	7,130	3.03	3.38
May	13,700	2,280	5,200	2.21	2.55
June	5,720	1,250	2,860	1.22	1.36
The year	28,000	470	3,810	1.62	22.00

CHENANGO RIVER

CHENANGO RIVER NEAR CHENANGO FORKS

Location.—About 1½ miles below Tioughnioga river, 2 miles below Chenango Forks post-office, Broome county, and 11½ miles above Binghamton and the mouth.

Drainage area.—1,380 square miles. See "Diversions."

Records available.—November 11, 1912, to June 30, 1918. Records were obtained at Binghamton, July 31, 1901, to December 31, 1911.

Gage.—Stevens water-stage recorder on the left bank on the farm of Erastus Ingraham; inspected by Mr. Ingraham.

Discharge measurements.—Made from cable about 100 feet above the gage by wading.

Channel and control.—Sand, gravel and small cobblestones; practically permanent.

Extremes of discharge.—Current year: Maximum stage from water-stage recorder, 13.48 feet at 6:30 P. M., February 26; discharge, about 23,000 second-feet (discharge relation affected by ice). Minimum stage from water-stage recorder, 2.94 feet, at 6:30 P. M., September 28; discharge, 504 second-feet.

1901–1918: Maximum stage recorded, 12.18 feet from noon until 1 P. M., April 2, 1916; discharge, 27,900 second-feet. Minimum discharge recorded occurred at gage height 4.6 feet at the former station in Binghamton at 8 A. M., August 28, 1909; discharge, about 10 second-feet.

Ice.—Stage-discharge relation affected by ice.

Diversions.— The run-off from 87.3 square miles at head of Chenango river and from 15.7 square miles at head of Tioughnioga river is stored in reservoirs and except for discharge over the spillways it is diverted out of the drainage area into the Erie canal. The above-mentioned drainage area for Chenango river does not include these two areas.

Accuracy.— Stage-discharge relation practically permanent; affected by ice for a large part of the period from January to March, inclusive. Rating curve well defined between 120 and 35,000 second-feet. Operation of the water-stage recorder fairly satisfactory throughout the year. Daily discharge ascertained by applying to the rating table mean daily gage heights, determined by inspecting gage height graph or for days of considerable fluctuation by averaging the hourly discharge. Results good except for periods when stage-discharge was affected by ice, when results were fairly good.

Coöperation.— Station established and maintained by the United States Geological Survey in coöperation with the State Engineer and Surveyor.

Discharge measurements of CHENANGO RIVER NEAR CHENANGO FORKS, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Oct. 14	E. D. Burchard	4.02	1,820
Dec. 26 *a*	C. C. Covert	3.94	838
1918			
Jan. 16 *b*	C. C. Covert	5.06	640
Feb. 11	C. C. Covert	4.29	595
Mar. 2	C. C. Covert	9.35	8,880
Mar. 7	E. D. Burchard	8.93	10,600
Mar. 22	C. C. Covert	9.08	14,800
April 26	C. C. Covert	4.72	3,100
June 3	J. W. Moulton	3.87	1,680

a Measurement made through partial ice cover.
b Measurement made through complete ice cover.

Daily discharge, in second-feet, of CHENANGO RIVER NEAR CHENANGO FORKS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	5,800	1,030	1,880	740	8,800	1,560	650	380	8,000	3,550	3,260	3,160
2.....	8,420	915	2,360	750	5,920	2,180	600	380	9,000	8,860	2,970	2,100
3.....	9,200	1,250	1,940	740	4,720	1,630	550	380	7,000	4,280	2,270	1,620
4.....	5,920	1,180	1,520	750	3,860	1,520	550	400	4,200	4,500	2,360	1,700
5.....	4,390	915	1,280	1,170	3,160	1,420	480	420	3,400	3,160	2,100	1,170
6.....	3,650	816	1,260	1,430	2,790	1,280	460	440	6,500	2,520	1,860	1,300
7.....	3,450	750	1,450	1,250	2,610	1,080	440	480	10,000	2,180	1,660	3,260
8.....	2,610	732	1,750	1,030	2,270	994	420	500	7,500	2,100	1,550	2,880
9.....	2,440	7,670	1,860	1,380	2,020	800	400	550	7,000	4,970	1,410	1,760
10.....	2,610	6,100	1,430	1,310	1,940	900	400	550	7,000	4,960	1,380	1,520
11.....	2,700	2,840	1,230	1,090	1,780	1,000	400	600	7,500	4,060	1,570	1,560
12.....	3,060	1,940	1,090	1,040	1,660	1,100	420	700	8,000	3,750	1,530	3,810
13.....	3,060	1,540	970	2,790	1,520	1,200	440	1,100	10,000	3,550	3,960	3,580
14.....	2,880	2,650	915	2,020	1,380	1,100	550	1,600	17,800	5,030	5,640	2,440
15.....	4,590	2,770	840	1,670	1,280	1,000	650	2,600	16,600	8,800	3,350	1,860
16.....	3,960	3,610	760	3,160	1,270	950	650	3,800	11,800	7,100	2,440	1,490
17.....	2,790	2,670	740	2,270	1,270	900	500	4,200	10,900	5,430	1,940	1,270
18.....	3,160	1,860	710	1,720	1,180	850	480	3,600	13,400	7,650	1,660	1,140
19.....	4,070	1,430	660	1,670	1,170	850	440	5,500	11,200	6,440	1,590	1,010
20.....	3,060	1,220	930	5,210	1,140	850	360	9,500	13,000	4,500	1,300	904
21.....	3,790	1,090	840	4,180	1,120	800	360	9,000	14,200	4,060	5,680	827
22.....	2,700	970	720	2,880	1,300	850	380	8,000	14,200	5,550	3,160	2,190
23.....	2,180	926	650	2,360	1,260	850	380	8,000	12,700	5,430	3,160	1,940
24.....	1,740	6,800	631	3,140	1,410	850	380	7,000	9,400	4,720	2,520	1,570
25.....	1,660	6,420	612	7,060	1,720	850	380	7,000	7,100	3,860	2,700	1,250
26.....	1,390	3,030	574	5,070	1,340	850	380	10,000	5,800	3,160	2,790	1,020
27.....	1,250	2,020	538	3,650	1,250	850	380	9,500	4,840	2,790	4,170	871
28.....	1,130	1,680	521	4,900	1,250	800	380	8,500	3,960	2,360	3,750	761
29.....	1,340	2,100	538	4,840	1,230	800	380	......	3,550	2,100	3,160	710
30.....	1,690	2,270	564	11,600	1,250	750	380	......	3,550	2,700	2,970	962
31.....	1,270	2,020	......	14,200	......	700	380	......	3,550	......	3,350	......
Mean...	3,290	2,360	1,060	3,130	2,160	1,040	452	3,740	8,790	4,300	2,680	1,720

NOTE.—Daily discharge, May 18 to June 10, determined from observations on sloping staff gage. Discharge, December 9 to March 13, inclusive, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monhtly discharge of CHENANGO RIVER NEAR CHENANGO FORKS, for the year ended June 30, 1918

[Drainage area, 1,380 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July..............................	9,200	1,130	3,290	2.38	2.75
August..............................	7,670	732	2,360	1.71	1.97
September..............................	2,360	521	1,060	0.768	0.86
October..............................	14,200	740	3,130	2.27	2.62
November..............................	8,800	1,120	2,160	1.57	1.75
December..............................	2,180	700	1,040	0.754	0.87
January..............................	650	360	452	0.328	0.38
February..............................	10,000	380	3,740	2.71	2.82
March..............................	17,800	3,400	8,790	6.37	7.34
April..............................	8,800	2,100	4,300	3.12	3.48
May..............................	5,680	1,300	2,680	1.94	2.24
June..............................	3,810	710	1,720	1.25	1.40
The year..............................	17,800	360	2,890	2.09	28.48

CHEMUNG RIVER

DESCRIPTION

Chemung river is formed at Painted Post by the confluence of Tioga and Cohocton rivers. Cohocton river lies entirely in the state of New York. Tioga river receives, just above its mouth, Canisteo river, a large tributary, which also has its drainage basin in New York to the south of Cohocton. The drainage area of Tioga river, above the Canisteo, is mainly in Pennsylvania. Chemung river flows southeastward through Corning, Elmira and Chemung, crosses the state line and flows for a short distance in Pennsylvania, then returns to New York and crosses again to Pennsylvania near Waverly, finally emptying into the Susquehanna near Athens, Bradford county, Pa. The total length of the river is about 40 miles, of which 30 miles lie in New York. The drainage area, measured at the mouth, is 2,520 square miles.

The topographic features of the basin are, as a rule, bold and broad. The hills rise to a height of several hundred feet on either side, within a short distance of the stream. The upland plateau is to a large extent wooded, has impervious soil, no lake storage and few marsh areas. Tributaries are ramifying and uniformly distributed, though not very numerous, and dry gullies, or flood channels, are common. The main river is sluggish, with low banks and a broad valley, or flood plain, which is often overflowed. The concentration of storm waters from the three large streams, which unite just above Corning, makes possible excessive floods. Dikes have been erected in the cities of Elmira and Corning for protection. One of the highest recorded freshets in the stream occurred June 1, 1889. It was preceded by phenomenal rainfall, aggregating several inches in a few hours during the night of May 31. The discharge at this time has been estimated at 67 second-feet per square mile from 2,055 square miles, or 138,000 second-feet.[a]

CHEMUNG RIVER AT CHEMUNG

Location.—At the highway bridge, about midway between Chemung, Chemung county, N. Y., and Willawana, Pa., half a mile upstream from the state line and about 10 miles above the mouth of the river.

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[a] Report of Francis Collingwood, C. E., on the protection of th city of Elmira against floods.

Drainage area.— 2,440 square miles.

Records available.—September 11, 1903, to June 30, 1918.

Gage.— Tape gage at the upstream side of the right span of the bridge. Gage read by D. L. Orcutt.

Discharge measurements.— Made from the bridge at medium and high stages and by wading at low stages.

Channel and control.— Sand and gravel; occasionally shifting.

Extremes of discharge.— Current year: Maximum stage recorded, 17.96 feet at 7 A. M., March 15; discharge, about 67,000 second-feet. Minimum stage recorded, 2.20 feet at 8 A. M., December 9; discharge, 425 second-feet.

1903–1918: Maximum stage recorded, 17.96 feet at 7 A. M., March 15, 1918; discharge, about 67,000 second-feet. Minimum stage recorded, 1.47 feet at 7 A. M., August 14, 1911; discharge, about 49 second-feet.

Ice.— Stage-discharge relation affected by ice.

Accuracy.— Stage-discharge relation probably permanent between dates of shift; affected by ice for a large portion of the period from December to March, inclusive. Rating curve well defined between 200 and 45,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Results good except during periods when the stage-discharge relation was affected by ice. Results fair for other periods.

Coöperation.— Station established and maintained by United States Geological Survey in coöperation with the State Engineer and Surveyor.

Discharge measurements of CHEMUNG RIVER AT CHEMUNG, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
Oct. 18	E. D. Burchard	3.17	1,230
Dec. 24 *a*	C. C. Covert	3.46	1,010
1918			
Feb. 10 *b*	E. D. Burchard	3.28	344
Mar. 6	E. D. Burchard	5.19	4,420
Mar. 20	C. C. Covert	5.91	5,200
April 28	E. D. Burchard	4.16	2,500
June 1	E. D. Burchard	4.85	3,710

a Measurement made through partial ice cover.
b Measurement made through complete ice cover.

Daily discharge, in second-feet, of CHEMUNG RIVER AT CHEMUNG, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	3,460	2,440	3,100	602	7,850	870	700	400	25,700	1,860	2,290	3,650
2.....	11,000	1,730	5,080	588	5,760	960	650	380	18,000	1,860	2,600	2,600
3.....	13,100	1,360	5,530	588	4,650	870	650	360	10,400	2,000	2,140	2,000
4.....	6,240	1,150	6,000	567	3,840	1,000	600	340	5,760	3,100	1,860	1,540
5.....	4,040	960	2,600	710	3,280	870	600	260	4,440	2,760	1,540	1,420
6.....	3,100	870	2,140	1,050	2,760	790	600	280	5,080	2,140	1,480	1,250
7.....	2,440	790	2,000	960	2,440	750	600	320	10,400	1,860	1,480	2,760
8.....	2,440	790	1,860	870	2,290	670	600	320	4,860	1,730	1,300	3,100
9.....	3,100	11,000	3,280	750	2,000	490	550	320	4,440	3,280	1,250	1,730
10.....	3,460	5,300	2,140	870	1,860	500	550	340	7,280	4,240	1,150	1,300
11.....	4,040	2,440	1,730	830	1,730	700	550	380	8,440	3,460	1,200	1,200
12.....	4,650	1,600	1,480	670	1,540	850	650	480	5,080	3,460	1,360	2,000
13.....	4,650	1,250	1,300	1,730	1,420	800	500	16,800	11,400	3,280	1,420	3,100
14.....	3,280	7,560	1,150	1,860	1,300	850	550	12,400	38,200	5,530	2,600	1,860
15.....	4,860	15,300	1,050	1,300	1,200	1,000	600	12,400	54,900	20,400	2,440	1,360
16.....	3,460	9,380	960	1,420	1,150	1,000	600	11,000	12,400	33,100	1,730	1,150
17.....	2,440	5,530	870	1,600	1,150	1,000	600	3,840	8,440	23,000	1,480	960
18.....	2,290	3,460	790	1,200	1,150	900	600	2,600	6,490	22,500	1,250	830
19.....	2,930	2,440	750	1,050	1,050	900	600	2,140	5,300	12,400	1,150	750
20.....	3,280	1,860	790	16,800	1,000	850	550	19,200	6,000	7,560	1,050	670
21.....	2,600	1,540	1,860	7,010	960	800	500	17,600	6,490	6,000	2,000	602
22.....	2,600	1,300	1,250	4,240	1,000	800	500	4,440	6,490	7,560	2,760	2,000
23.....	2,290	1,420	960	3,100	1,200	850	500	3,460	5,760	6,240	3,460	3,280
24.....	2,000	6,000	790	3,650	1,300	1,000	480	3,100	4,440	5,530	4,440	2,000
25.....	2,000	4,440	750	24,300	1,100	1,100	500	3,100	3,650	4,440	2,760	1,420
26.....	1,600	2,290	670	17,200	710	1,300	460	9,700	3,280	3,460	3,460	1,100
27.....	2,600	1,730	630	16,800	670	1,500	460	11,400	2,760	2,930	4,860	870
28.....	2,290	1,360	616	18,000	790	1,300	440	6,750	2,440	2,600	5,300	750
29.....	1,540	1,860	574	13,100	790	1,000	460	......	2,290	2,140	3,460	790
30.....	13,800	3,460	574	17,200	830	800	420	......	2,000	2,140	8,440	670
31.....	4,240	4,440	......	13,800	......	750	400	......	2,000	......	6,240	......
Mean...	4,060	3,460	1,780	5,630	1,960	898	550	5,150	9,500	6,750	2,580	1,620

NOTE.— Discharge, December 10 to February 12, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of CHEMUNG RIVER AT CHEMUNG, for the year ended June 30, 1918

[Drainage area, 2,440 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	13,800	1,540	4,060	1.66	1.91
August	15,300	790	3,460	1.42	1.64
September	6,000	574	1,780	0.73	0.81
October	24,300	567	5,630	2.31	2.66
November	7,850	670	1,960	0.804	0.90
December	1,500	490	898	0.368	0.42
January	700	400	550	0.225	0.26
February	19,200	260	5,150	2.11	2.20
March	54,900	2,000	9,500	3.89	4.49
April	33,100	1,730	6,750	2.77	3.09
May	8,440	1,050	2,580	1.06	1.22
June	3,650	602	1,620	0.663	0.74
The year	54,900	260	3,660	1.50	20.34

ALLEGHENY RIVER DRAINAGE BASIN

ALLEGHENY RIVER

DESCRIPTION

Allegheny river drains the western slopes of the Allegheny mountains in Pennsylvania and New York.

The river rises in the central part of Potter county, in northern Pennsylvania, flows in a general northwesterly direction into New York to about the central part of Cattaraugus county, where it turns and flows southwestward back into Pennsylvania. At Franklin, in Venango county, it turns and flows southeastward to the mouth of Mahoning creek, in Armstrong county, where it again bends to the southwest, and at Pittsburgh joins the Monongahela to form the Ohio. The river is about 290 miles long (map measurement) and its drainage area, which is nearly 50 per cent greater than that of the Monongahela, comprises about 11,100 square miles.

The noteworthy tributaries in New York are Oswayo, Olean and Tunugwant creeks. Oswayo and Tunugwant creeks rise in Pennsylvania. Two other important creeks — Conewango and Brokenstraw — have their sources in New York state, but are tributary to the main stream at points in Pennsylvania.

The elevation of the sources of the river is about 2,500 feet above sea-level. At Olean, N. Y., the elevation is 1,420 feet; at Franklin, Pa., the elevation is 960 feet; at Pittsburgh, Pa., the elevation is 692 feet.

The basin is somewhat regular in shape, being about 2½ times as long as it is wide. Its northwestern boundary is, at one point, about 8 miles from Lake Erie, lying within about 40 miles of Buffalo. Below Franklin, Pa., the river flows near the western boundary of its basin. The surrounding country is made up of high hills or mountains separated by deep valleys, but west of the main river the country is less mountainous, though the surface is still rolling and hilly.

The bed of the stream is composed chiefly of gravel, ranging in size from small pebbles to cobblestones. The banks are made up of sand, gravel or clay. The area is underlaid by shales and except in stream valleys the soil has little depth.

This basin is exceptionally rich in natural resources — coal, oil, gas, limestone, glass sand and building stones, which occur in abundance.

This basin was at one time covered with timber, the principal varieties being pine and hemlock. At present, however, only light forests and brush are found at the headwaters of the tributaries, the pine and hemlock having been cut off some time ago.

The mean annual rainfall in this region is about 40 inches and the winters are severe. Snowfall is heavy in the upper part of the basin and lasts for long periods, and ice forms to a thickness of about 2 feet. The heavy ice during the spring floods is very destructive. Jams frequently occur, which cause considerable damage from backwater.

Allegheny river is subject to very severe floods, which cause heavy losses to manufacturing and other interests along the river.

The fall of the main river and tributaries is comparatively large and if the stream were in a district where fuels were more expensive, it would undoubtedly be much used for power. When the price of coal advances, so that water-power can compete with steam, the water-power on this stream will be more extensively developed.

The Cuba reservoir, which feeds the Erie canal through Genesee river, lies on the divide between the Allegheny and Genesee drainage basins. Part of the overflow from this reservoir passes into the Allegheny and the rest into the Genesee.

ALLEGHENY RIVER AT RED HOUSE

Location.— At highway bridge in Red House, Cattaraugus county, about 5 miles below Salamanca and 13 miles above the boundary between New York and Pennsylvania. Conewango creek, the outlet of Chautauqua lake, enters the Allegheny in Pennsylvania about 30 miles below the station.

Drainage area.— 1,640 square miles.

Records available.— September 4, 1903, to June 30, 1918.

Gage.— Gurley 7-day water-stage recorder on the left bank just below the highway bridge, installed September 3, 1917; inspected by Mr. W. E. Coe.

Prior to this date chain gage attached to the upstream side of bridge near left end.

Discharge measurements.—Made from downstream side of bridge.

Channel and control.—Coarse gravel, occasionally shifting. Current good for medium and high stages, slow at low stages.

Extremes of discharge.—Current year: Maximum stage from water-stage recorder, 11.7 feet at 5 A. M., March 15; discharge, about 30,000 second-feet. Minimum stage from water-stage recorder, 3.17 feet from 10 P. M. to midnight, September 29; discharge, 292 second feet.

1903–1918: Maximum stage recorded, 12.7 feet, March 26, 1913; discharge, about 40,000 second-feet. Minimum stage recorded, 2.7 feet on several days in December, 1908; discharge, about 100 second-feet.

Ice.—Stage-discharge relation somewhat affected by ice.

Regulation.—Low-water flow may be slightly affected by the operation of several small power-plants above Salamanca. At Olean a wasteway from Cuba reservoir enters the river through Olean creek. This reservoir is on the divide between Oil creek, tributary to Allegheny river, and Genesee river, tributary to Lake Ontario. The stored water is commonly turned into Genesee river through the abandoned summit level of Genesee Valley canal, or may be diverted into Oil creek through a guard-lock at the head of the canal.

Accuracy.—Stage-discharge relation practically permanent between dates of shifting. Affected by ice during a large part of the period from December to March, inclusive. Rating curve well defined between 300 and 900 second-feet and between 6,000 and 13,000 second-feet. Chain gage read to half-tenths twice daily. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table. Daily gage height obtained from automatic record by inspection. Results fairly good except for periods when the stage discharge relation was affected by ice, when results were fair.

Coöperation.—Station established and maintained by the United States Geological Survey in coöperation with the State Conservation Commission.

Discharge measurements of ALLEGHENY RIVER AT RED HOUSE, during the year ended June 30, 1918

DATE	Made by	Gage height	Discharge
1917		*Feet*	*Sec.-ft.*
July 30	C. C. Covert	5.00	2,710
Aug. 20	J. W. Moulton	4.24	1,470
Aug. 30	E. D. Burchard	3.57	634
Dec. 21	E. D. Burchard	4.37	958
1918			
Jan. 21 *a*	E. D. Burchard	4.47	374
Feb. 28	E. D. Burchard	7.37	9,900
Feb. 28	E. D. Burchard	7.30	9,560
Mar. 20	E. D. Burchard	6.26	6,170
May 28	J. W. Moulton	5.96	5,300
June 21	E. D. Burchard	3.58	657

a Measurement made through complete ice cover.

Daily discharge, in second-feet, of ALLEGHENY RIVER AT RED HOUSE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	3,610	1,890	1,010	340	15,000	1,460	800	360	10,600	1,740	1,660	2,240
2	7,080	1,570	1,570	402	10,200	1,870	750	340	13,300	1,710	1,580	2,110
3	8,060	1,140	2,040	410	7,260	1,480	650	380	13,300	1,640	1,460	1,860
4	6,770	890	1,620	655	4,930	1,420	600	360	11,000	2,160	1,310	1,490
5	5,060	775	1,240	1,050	3,940	1,350	480	340	8,230	2,250	1,240	1,370
6	3,610	665	1,010	1,010	3,180	1,170	550	340	9,250	2,060	1,240	1,220
7	3,180	665	902	998	2,780	998	550	360	10,200	1,860	1,240	1,240
8	4,300	665	832	878	2,460	775	700	380	7,440	1,770	1,220	1,460
9	4,060	665	775	844	2,160	700	750	420	6,540	1,920	1,210	1,160
10	4,060	665	698	867	1,990	700	600	460	11,600	2,110	1,460	960
11	3,830	665	625	786	1,830	750	400	800	9,600	1,970	2,480	905
12	7,400	775	535	786	1,680	800	360	1,700	8,070	2,060	2,980	1,190
13	7,080	665	546	1,170	1,540	850	320	6,500	9,250	2,110	2,820	1,920
14	6,170	720	498	1,440	1,410	850	360	9,000	23,400	3,660	2,290	1,590
15	5,060	1,010	.....	1,290	1,290	850	380	9,600	28,400	5,290	2,020	1,160
16	4,800	2,980	.....	2,070	1,250	800	380	8,900	21,800	5,290	1,940	1,000
17	4,060	2,780	.....	1,920	1,210	800	380	5,830	15,100	5,420	1,800	942
18	3,830	2,060	.....	1,480	1,170	750	380	3,310	9,600	5,560	1,770	942
19	3,180	1,730	.....	1,790	1,100	750	380	3,540	7,140	5,560	1,740	848
20	3,180	1,570	.....	7,510	1,040	750	380	18,800	5,970	5,290	1,360	696
21	2,980	1,140	.....	7,560	1,010	1,100	380	16,800	5,420	4,770	1,460	685
22	2,320	1,140	.....	6,170	1,080	1,700	380	12,900	5,160	4,270	2,290	2,580
23	2,410	1,280	.....	4,550	1,280	1,700	360	8,900	4,640	3,780	3,310	4,820
24	2,060	1,210	.....	5,080	1,280	1,900	360	8,230	4,140	3,540	4,520	3,730
25	1,890	1,010	.....	10,200	1,180	2,800	360	6,990	3,660	3,200	4,400	2,600
26	1,890	950	.....	10,200	1,170	2,600	380	10,900	3,200	2,680	5,560	2,040
27	2,140	775	.....	12,800	938	2,000	400	11,000	2,840	2,350	7,140	1,690
28	2,060	615	.....	17,800	1,080	1,600	400	9,600	2,540	2,110	5,160	1,420
29	2,410	665	298	18,800	1,100	1,400	400	.....	2,270	1,890	3,660	1,210
30	2,780	720	304	23,800	1,130	1,200	380	.....	2,040	1,770	2,860	1,080
31	2,320	890	.....	21,800	.....	950	360	.....	2,040	.....	2,660	.....
Mean	3,990	1,130	675	5,370	2,620	1,250	462	5,610	8,960	3,060	2,510	1,610

NOTE.—Mean discharge, September 15 to 28, estimated, because of no gage-height record, as 407 second-feet. Discharge, December 9 to February 14, estimated, because of ice, from discharge measurements, weather records and study of gage-height graph.

Monthly discharge of ALLEGHENY RIVER AT RED HOUSE, for the year ended June 30, 1918

[Drainage area, 1,640 square miles]

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF
	Maximum	Minimum	Mean	Per square mile	Depth in inches on drainage area
July	8,060	1,890	3,990	2.43	2.80
August	2,980	615	1,130	0.690	0.80
September	2,060	370	675	0.412	0.46
October	23,800	340	5,370	3.27	3.77
November	15,000	938	2,620	1.60	1.78
December	2,800	700	1,250	0.762	0.88
January	800	320	462	0.282	0.33
February	18,800	340	5,610	3.42	3.56
March	28,400	2,040	8,960	5.30	6.30
April	5,560	1,640	3,060	1.87	2.09
May	7,140	1,210	2,510	1.53	1.76
June	4,820	685	1,610	0.982	1.10
The year	28,400	320	3,090	1.88	25.63

CHADAKOIN RIVER

DESCRIPTION

Chadakoin river is the outlet of Chautauqua lake. It follows a winding course for about 18 miles, having a general easterly direction, to its junction with Conewango creek, which rises in the northerly parts of Chautauqua and Cattaraugus counties and flows in a southerly direction, entering the Allegheny river in the state of Pennsylvania.

Chautauqua lake, about 16 miles long and 1 to 2 miles wide, occupies a deep valley in the highlands which rise abruptly a few miles to the southeast of Lake Erie. The surface of the lake is about 735 feet above Lake Erie and 1,308 feet above sea-level, while the surrounding hills rise 600 to 800 feet higher. There are numerous small streams entering the lake, of which Prendergast creek is the largest.

The principal tributary of Chadakoin river is Cassadaga creek, entering from the north about 4 miles below Jamestown. The river has a total fall of about 70 feet from the lake surface to its junction with Conewango creek.

CHADAKOIN RIVER AT BOAT LANDING, JAMESTOWN

This station, established July 31, 1915, is located opposite the boat landing at the Fairmount avenue bridge over Chadakoin river about 3 miles below the foot of Chautauqua lake. The gage, No. 226, is a staff having a range of 9 feet, between elevations 1,306.0 and 1,315.0 (U. S. G. S. datum), secured to a pile about 60 feet upstream from the Fairmount avenue bridge near the right bank of the stream. The gage is read once daily to tenths, with occasional readings to half-tenths.

Daily elevation of water-surface (U. S. G. S. datum) of CHADAKOIN RIVER AT BOAT LANDING, JAMESTOWN, for the year ended June 30, 1918. Horace S. Butts, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	1,309.6	1,309.2	1,308.4	1,308.15	1,310.3	1,309.2	1,308.95	1,308.55	1,310.5	1,310.0	1,309.25	1,308.7
2	1,309.8	1,309.2	1,308.3	1,308.0	1,310.3	1,309.15	1,308.95	1,308.5	1,310.4	1,309.95	1,309.2	1,308.7
3	1,309.8	1,309.1	1,308.4	1,307.95	1,310.25	1,309.1	1,308.9	1,308.5	1,310.4	1,309.9	1,309.1	1,308.65
4	1,309.7	1,309.0	1,308.4	1,308.1	1,310.2	1,309.1	1,308.85	1,308.5	1,310.4	1,309.85	1,309.1	1,308.55
5	1,309.6	1,309.0	1,308.3	1,308.1	1,310.15	1,309.1	1,308.85	1,308.5	1,310.4	1,309.8	1,309.1	1,308.55
6	1,309.5	1,309.0	1,308.45	1,308.15	1,310.05	1,309.05	1,308.8	1,303.45	1,310.5	1,309.65	1,309.0	1,308.5
7	1,309.5	1,308.85	1,308.3	1,308.1	1,310.0	1,309.0	1,308.85	*a*	1,310.5	1,309.65	1,309.0	1,308.6
8	1,309.5	1,308.8	1,308.35	1,308.1	1,310.0	1,309.0	1,308.8	*a*	1,310.4	1,309.7	1,309.2	1,308.5
9	1,309.5	1,308.8	1,308.4	1,308.05	1,309.95	1,309.05	1,308.8	*a*	1,310.4	1,309.6	1,308.9	1,308.5
10	1,309.55	1,308.75	1,308.3	1,308.0	1,309.85	1,309.05	1,308.8	*a*	1,310.7	1,309.5	1,308.95	1,308.45
11	1,309.65	1,308.7	1,308.25	1,308.0	1,309.8	1,309.05	1,308.8	1,303.5	1,310.65	1,309.6	1,309.0	1,308.4
12	1,309.7	1,308.7	1,308.2	1,308.0	1,309.75	1,309.0	1,308.8	*a*	1,310.6	1,309.55	1,308.9	1,308.75
13	1,309.6	1,308.6	1,308.2	1,308.1	1,309.7	1,309.0	1,308.75	1,308.8	1,310.7	1,309.55	1,309.25	1,308.5
14	1,309.8	1,308.6	1,308.2	1,308.0	1,309.65	1,309.0	1,308.75	1,308.9	1,311.4	1,309.55	1,309.1	1,308.5
15	1,309.8	1,308.6	1,308.15	1,308.15	1,309.6	1,309.0	1,308.8	1,309.3	1,311.8	1,309.6	1,309.1	1,308.4
16	1,309.7	1,308.6	1,308.1	1,308.15	1,309.6	1,308.95	1,308.7	1,309.55	1,311.65	1,309.5	1,309.05	1,308.3
17	1,309.6	1,308.6	1,308.1	1,308.1	1,309.5	1,308.9	1,308.75	1,309.6	1,311.5	1,309.5	1,309.05	1,308.4
18	1,309.6	1,308.6	1,308.1	1,308.05	1,309.6	1,308.9	1,308.75	1,309.6	1,311.4	1,309.6	1,309.0	1,308.4
19	1,309.6	1,308.55	1,308.1	1,308.35	1,309.5	1,308.9	1,308.7	1,309.6	1,311.3	1,309.5	1,309.0	1,308.35
20	1,309.6	1,308.45	1,308.1	1,308.45	1,309.4	1,308.9	1,308.7	1,310.4	1,311.2	1,309.35	1,309.0	1,308.25
21	1,309.6	1,308.45	1,308.15	1,308.35	1,309.35	1,308.85	1,308.7	1,310.55	1,311.05	1,309.45	1,308.95	1,308.2
22	1,309.6	1,308.4	1,308.1	1,308.4	1,309.3	1,308.9	1,308.65	*a*	1,310.95	1,309.5	1,308.9	1,308.5
23	1,309.55	1,308.4	1,308.0	1,308.4	1,309.35	1,308.9	1,308.6	1,310.4	1,310.85	1,309.55	1,308.95	1,308.45
24	1,309.5	1,308.45	1,308.0	1,308.5	1,309.4	1,308.95	1,308.6	1,310.3	1,310.7	1,309.55	1,308.9	1,308.3
25	1,309.5	1,308.5	1,308.0	1,309.0	1,309.3	1,309.1	1,308.6	1,310.25	1,310.6	1,309.4	1,308.85	1,308.3
26	1,309.5	1,308.4	1,308.0	1,309.0	1,309.25	1,309.05	1,308.6	1,310.55	1,310.6	1,309.3	1,308.8	1,308.25
27	1,309.5	1,308.3	1,308.0	1,309.2	1,309.15	1,309.05	1,308.6	1,310.5	1,310.45	1,309.3	1,308.85	1,308.2
28	1,309.4	1,308.3	1,308.0	1,309.3	1,309.15	1,309.05	1,308.6	1,310.5	1,310.35	1,309.2	1,308.8	1,308.3
29	1,309.35	1,308.4	1,308.0	1,309.3	1,309.1	1,309.05	1,308.6	....	1,310.25	1,309.2	1,308.8	1,308.25
30	1,309.3	1,308.4	1,308.4	1,310.2	1,309.1	1,309.0	1,308.55	....	1,310.15	1,309.25	1,308.75	1,308.2
31	1,309.25	1,308.4	....	1,310.35	....	1,309.0	1,308.55	....	1,310.05	....	1,308.7	....

a No record.

CHADAKOIN RIVER AT WARNER DAM, JAMESTOWN

This station, established July 31, 1915, is located at Warner dam, Jamestown, about 4 miles below the foot of Chautauqua lake. The gage, No. 225, is a staff having a range of 16 feet, between elevations 1,304.0 and 1,320.0 (U. S. G. S. datum), secured to the second pile from the right bank of the river, about 30 feet upstream from the dam. The gage is read once daily to tenths, with occasional readings to half-tenths.

Daily elevation of water-surface (U. S. G. S. datum) of CHADAKOIN RIVER ABOVE WARNER DAM, JAMESTOWN, for the year ended June 30, 1918. Horace S. Butts, Observer

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	1,307.2	1,308.0	1,307.7	1,307.4	1,308.3	1,307.4	1,305.8	1,307.4	1,304.7	1,307.4	1,307.0	1,307.1
2	1,307.8	1,307.9	1,308.0	1,306.9	1,308.3	1,307.55	1,305.8	1,307.35	1,304.7	1,307.25	1,307.0	1,306.8
3	1,307.7	1,307.75	1,308.0	1,306.35	1,308.3	1,307.55	1,307.0	1,307.55	1,304.7	1,307.2	1,307.3	1,307.05
4	1,307.5	1,307.5	1,307.7	1,307.1	1,307.9	1,307.5	1,306.9	1,307.5	1,304.7	1,307.2	1,307.3	1,306.95
5	1,307.45	1,307.7	1,307.6	1,307.2	1,308.3	1,307.6	1,307.7	1,307.3	1,304.7	1,307.2	1,307.1	1,307.2
6	1,307.35	1,307.45	1,307.8	1,307.6	1,308.4	1,307.45	1,305.8	1,307.2	1,304.8	1,307.1	1,307.1	1,307.15
7	1,307.3	1,307.2	1,307.6	1,306.8	1,308.3	1,307.4	1,308.0	*a*	1,304.8	1,307.2	1,306.4	1,307.4
8	1,307.3	1,307.4	1,307.6	1,307.1	1,308.2	1,307.25	1,308.0	*a*	1,306.0	1,307.3	1,306.8	1,307.0
9	1,307.2	1,307.2	1,307.75	1,306.8	1,308.15	*1,307.3	1,307.8	*a*	1,306.05	1,307.35	1,307.2	1,307.2
10	1,307.7	1,307.1	1,307.4	1,307.0	1,308.0	*1,307.3	1,307.0	*a*	1,306.4	1,307.05	1,307.0	1,307.35
11	1,307.8	1,306.8	1,307.4	1,306.7	1,307.4	*1,307.3	1,307.0	*a*	1,306.4	1,307.3	1,307.2	1,307.3
12	1,307.8	1,307.0	1,307.1	1,306.8	1,308.2	*1,307.3	1,307.9	*a*	1,306.35	1,307.4	1,306.6	1,307.45
13	1,307.85	1,306.7	1,307.1	1,307.2	1,308.2	*1,307.3	1,307.6	1,307.4	1,306.65	1,307.35	1,306.85	1,307.35
14	1,307.6	1,306.7	1,306.9	1,307.15	1,308.0	*1,307.3	1,308.0	1,307.7	1,308.0	1,307.25	1,307.3	1,307.3
15	1,307.4	1,306.6	1,307.1	1,307.2	1,308.0	*1,307.4	1,308.05	1,308.2	1,307.9	1,307.4	1,307.45	1,307.4
16	1,307.6	1,306.55	1,306.8	1,307.3	1,308.0	1,307.9	1,308.05	1,308.2	1,307.8	1,307.4	1,307.25	1,307.0
17	1,307.7	1,306.7	1,306.7	1,307.35	1,307.8	1,307.7	1,308.1	1,308.45	1,307.7	1,307.3	1,307.25	1,307.25
18	1,307.7	1,306.6	1,307.2	1,307.35	1,307.9	1,307.9	1,308.15	1,308.3	1,307.6	1,307.4	1,307.25	1,307.45
19	1,307.6	1,307.8	1,306.8	1,307.7	1,307.6	1,307.9	1,308.1	1,307.95	1,307.4	1,307.4	1,306.75	1,307.4
20	1,307.75	1,307.45	1,307.4	1,307.7	1,307.8	1,307.6	1,308.1	*a*	1,307.55	1,307.4	1,307.2	1,307.3
21	1,307.7	1,307.0	1,307.4	1,307.8	1,307.6	1,307.6	1,308.1	*a*	1,307.6	1,307.25	1,307.35	1,307.25
22	1,307.35	1,306.7	1,307.35	1,307.7	1,307.25	1,307.9	1,308.0	*a*	1,307.6	1,307.4	1,307.2	1,307.5
23	1,307.7	1,307.2	1,306.9	1,307.75	1,307.4	1,307.55	1,307.6	1,305.0	1,307.55	1,307.4	1,307.35	1,307.2
24	1,307.65	1,307.5	1,306.9	1,308.0	1,307.6	1,308.2	1,307.5	1,304.8	1,307.6	1,307.4	1,307.3	1,307.35
25	1,308.1	1,307.6	1,307.0	1,308.5	1,307.1	1,308.2	1,307.65	1,304.7	1,307.5	1,307.4	1,306.85	1,307.3
26	1,308.1	1,307.6	1,306.85	1,308.5	1,307.1	1,308.1	1,307.7	1,304.7	1,307.5	1,307.4	1,306.55	1,307.35
27	1,308.1	1,306.9	1,306.8	1,308.4	1,307.15	1,307.9	1,307.7	1,304.7	1,307.4	1,307.45	1,306.9	1,307.3
28	1,307.7	1,307.35	1,307.2	1,308.5	1,307.8	1,307.9	1,307.7	1,304.7	1,307.5	1,307.0	1,306.9	1,307.4
29	1,307.6	1,307.7	1,306.9	1,308.2	1,307.2	1,307.3	1,307.45	....	1,307.5	1,307.3	1,306.9	1,307.35
30	1,307.4	1,307.6	1,307.8	1,308.1	1,307.3	1,306.0	1,307.45	....	1,307.4	1,307.2	1,306.95	1,307.1
31	1,307.7	1,307.5	....	1,308.3	....	1,307.2	1,307.4	....	1,307.4	....	1,307.0	....

* Approximate only. *a* No record.

TABLE OF DISCHARGES PER SQUARE MILE

Summary of Mean Discharge, in Second-feet per Square Mile, for all River Stations for which Data are Available in this Report

STATION	Drainage area	1917						1918						Maintained by
		July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	
ST. LAWRENCE RIVER BASIN	*Sq. mi.*													
Cattaraugus creek at Versailles	467	1.52	0.478	0.582	4.00	1.54	1.96	0.631	3.78	4.05	1.05	0.877	0.505	U. S. G. S.
Little Tonawanda creek at Linden	22	1.00	0.110	0.105	2.08	0.782	0.768	0.277	3.73	4.86	1.00	0.427	0.379	U. S. G. S.
Genesee river at Scio	297	2.41	1.16	0.762	3.50	1.53	0.633	0.226	3.74	4.58	3.15	1.55	0.862	U. S. G. S.
" " at St. Helena	1,030	1.75	0.609	0.513	3.22	0.990	0.468	0.209	3.33	4.02	1.52	0.631	0.400	U. S. G. S.
" " at Jones bridge near Mt. Morris	1,410	1.67	0.563	0.483	3.23	1.06	0.575	0.213	2.56	4.21	1.51	0.738	0.418	U. S. G. S.
" " at Rochester	2,360	1.29	0.441	0.449	1.96	1.06	0.610	0.239	2.50	3.69	1.35	0.572	0.416	U. S. G. S.
Canaseraga creek at Groveland Station	195	1.44	0.382	......	2.13	1.00	......	......	......	......	1.17	0.626	0.335	U. S. G. S.
Keshequa creek at Craig Colony, Sonyea	69	......	......	......	......	0.536	0.551	0.155	2.12	2.77	0.96	0.667	0.194	U. S. G. S.
Canadice lake near Hemlock	12.6	1.81	0.333	0.263	1.13	1.65	0.391	0.383	1.28	3.29	0.982	0.733	0.514	R. C. E.
Oswego river at Minetto	5,091	1.41	0.547	0.512	0.643	1.13	0.807	0.512	1.17	3.16	2.13	1.15	0.96	S. E.
" " at new High dam	5,097	2.00	0.797	0.811	1.01	1.61	1.09	0.746	1.56	3.58	2.66	1.62	1.32	S. E.
Canandaigua outlet at Alloway	440	1.28	0.355	0.286	0.552	0.548	0.770	......	......	......	1.24	0.614	0.495	S. E.
Owasco outlet near Auburn *a*	206	2.28	1.09	1.04	1.30	1.89	1.11	0.845	0.864	3.04	2.31	1.49	1.20	U. S. G. S.
Oneida river at Caughdenoy	1,377	2.26	0.785	0.898	1.49	2.34	1.11	0.834	1.43	3.87	4.12	2.37	1.45	S. E.
Butternut creek near Jamesville	53	......	......	......	......	......	......	......	......	......	......	......	......	
Black river near Boonville *b*	308	1.20	1.19	0.475	3.17	2.94	1.03	0.670	1.95	4.26	6.14	3.03	0.696	U. S. G. S.
" " near Felts Mills	1,851	1.23	0.911	0.870	2.45	2.37	1.15	1.08	1.97	3.60	5.67	3.35	1.82	S. E.
" " at Black River	1,870	1.25	0.898	0.780	2.38	2.34	0.989	0.754	1.90	3.49	5.51	3.13	1.65	U. S. G. S.
Moose river at Moose River	370	1.44	0.706	0.692	2.89	2.43	0.954	0.624	1.21	2.01	5.92	4.41	1.70	U. S. G. S.
Middle branch of Moose river at Old Forge *c*	51.5	1.70	1.26	1.41	2.12	3.69	1.13	1.20	2.58	2.49	3.56	4.24	1.69	U. S. G. S.
Beaver river at State dam near Beaver River *d*	176	1.20	1.26	1.31	1.30	1.86	1.40	1.24	1.07	1.39	6.22	4.80	2.70	U. S. G. S.
Oswegatchie river near Heuvelton	961	0.766	0.564	0.645	1.58	1.62	0.902	0.588	2.04	4.04	4.58	2.74	1.70	U. S. G. S.
East branch of Oswegatchie river at Newton Falls	166	1.42	1.85	1.98	1.76	1.56	1.90	1.75	2.11	2.21	2.40	4.17	2.96	U. S. G. S.
West branch of Oswegatchie river near Harrisville	245	0.808	0.502	0.645	2.50	2.16	0.82	0.429	2.52	3.89	6.22	3.13	2.32	U. S. G. S.
Raquette river at Piercefield *e*	723	1.63	0.565	0.566	1.11	2.27	0.878	0.475	0.627	1.56	5.37	4.62	2.46	U. S. G. S.
St. Regis river at Brasher Center	621	0.752	0.420	0.605	1.42	......	......	......	......	......	......	......	......	U. S. G. S.
Ausable river at Ausable Forks	444	0.629	1.53	0.704	1.80	0.874	0.453	0.298	1.56	2.04	4.98	3.56	1.39	U. S. G. S.
Saranac river near Plattsburg	607	1.81	0.514	0.672	1.14	1.08	0.639	0.804	1.48	2.37	3.86	2.13	1.48	U. S. G. S.

HUDSON RIVER BASIN														
Hudson river near Indian Lake	418	1.26	0.457	0.627	1.99	1.86	0.440	0.467	0.691	2.89	6.36	4.35	2.16	U. S. G. S.
" " at North Creek	804	1.32	1.09	1.03	1.07	1.50	1.02	0.995	0.913	2.97	5.81	2.91	1.92	U. S. G. S.
" " at Thurman	1,550	1.18	0.806	0.877	1.19	1.55	0.910	0.748	0.606	2.34	5.85	2.90	1.60	U. S. G. S.
" " at Spier Falls	2,800	1.15	0.621	0.575	1.20	1.74	0.729	0.644	0.829	2.03	6.82	3.11	1.39	U. S. G. S.
" " at Crocker's Reef	2,959	......	......	......	......	......	......	......	......	......	......	......	......	S. E.
" " at Mechanicville, upper dam	4,500	0.909	0.410	0.393	0.813	1.30	0.578	0.320	1.05	2.67	4.84	2.33	1.08	W. Va. P. & P. C.
" " at Mechanicville, lower dam	4,570	......	......	......	......	......	......	......	......	......	......	......	......	A. E. P. C.
Cedar river near Indian Lake	85	1.51	0.434	0.457	2.55	2.52	......	......	......	......	......	......	......	U. S. G. S.
Indian river near Indian Lake *f*	132	2.08	4.52	3.80	0.939	0.170	3.89	3.76	2.25	0.856	0.278	0.263	1.22	U. S. G. S.
Schroon river at Riverbank	534	0.966	0.483	0.676	0.451	1.62	0.738	0.461	0.367	1.63	6.28	2.83	1.35	U. S. G. S.
Sacandaga river near Hope	494	1.10	0.486	0.818	2.06	1.71	0.476	0.457	1.32	3.04	8.08	3.99	1.28	U. S. G. S.
" " at Hadley	1,060	1.08	0.366	0.267	1.25	1.80	0.475	0.360	1.28	3.51	7.45	3.14	1.31	U. S. G. S.
Hoosic river near Eagle Bridge	512	0.492	0.879	0.340	0.656	0.866	0.611	0.400	3.65	3.71	4.00	2.19	0.859	U. S. G. S.
" " at Schaghticoke	635	0.472	0.339	0.192	0.773	0.595	0.235	0.102	1.89	2.73	3.43	1.91	0.669	S. P. C.
Mohawk river at Vischer Ferry dam	3,430	1.34	0.729	0.671	1.80	1.56	0.813	0.484	1.74	4.26	4.00	1.60	0.974	U. S. G. S.
" " at Crescent dam	3,490	......	......	......	......	......	0.808	0.470	1.71	4.18	3.90	1.60	1.01	U. S. G. S.
West Canada creek at Trenton Falls, power dam	376	1.18	1.16	0.809	2.77	3.96	1.31	1.11	1.26	2.54	4.00	2.40	1.15	S. E.
West Canada creek at Kast Bridge	575	1.84	1.00	0.780	2.72	3.29	......	......	......	......	5.19	3.04	1.45	S. E.
East Canada creek at Dolgeville	257	......	......	......	......	......	......	......	......	......	......	......	......	
Schoharie creek at Prattsville	236	0.54	0.35	0.27	2.39	1.75	0.48	0.21	3.47	4.449	4.86	1.87	0.73	B. W. S.
" " at Middleburg	532	0.545	0.320	0.265	2.18	1.42	......	......	......	3.77	3.82	1.63	0.712	S. E.
Esopus creek at Coldbrook	192	1.17	0.79	0.59	2.44	1.84	0.89	0.43	2.99	6.17	5.69	1.91	1.22	B. W. S.
Rondout creek at Lackawack	100	2.14	1.42	1.05	1.64	1.89	1.24	0.64	2.83	5.68	4.13	1.58	0.86	B. W. S.
" " at Rosendale	386	1.35	0.70	0.48	1.00	1.10	0.99	0.48	8.77	5.13	3.42	1.46	0.07	B. W. S.
DELAWARE RIVER BASIN														
East branch of Delaware river at Fish Eddy	790	2.00	1.32	0.736	2.79	2.41	0.994	0.472	2.00	5.09	4.34	1.90	1.39	U. S. G. S.
Delaware river at Port Jervis	3,250	1.47	0.776	0.456	1.45	1.76	0.624	0.397	2.45	4.38	3.30	1.58	1.06	U. S. G. S.
Beaver kill at Cooks Falls	236	3.47	2.65	0.996	3.06	2.14	0.975	0.780	1.77	6.02	5.51	1.99	1.22	U. S. G. S.
West branch of Delaware river at Hale Eddy	611	1.67	0.735	0.455	2.44	1.78	0.484	0.355	2.86	4.68	3.26	2.13	1.64	U. S. G. S.
SUSQUEHANNA RIVER BASIN														
Susquehanna river at Conklin	2,350	2.00	0.924	0.387	1.63	1.22	0.523	0.333	1.85	4.12	3.03	2.21	1.22	U. S. G. S.
Chenango river near Chenango Forks	1,880	2.38	1.71	0.768	2.27	1.57	0.754	0.328	2.71	6.37	3.12	1.94	1.25	U. S. G. S.
Chemung river at Chemung	2,440	1.66	1.42	0.73	2.31	0.804	0.368	0.225	2.11	3.89	2.77	1.06	0.663	U. S. G. S.
ALLEGHENY RIVER BASIN														
Allegheny river at Red House	1,640	2.43	0.690	0.412	3.27	1.60	0.762	0.282	3.42	5.30	1.87	1.53	0.982	U. S. G. S.

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a An average flow of about 10 second-feet is pumped from Owasco lake for water-supply of city of Auburn. Proportion returning to stream above gaging station not known. *b* These figures do not include the total run-off above this station on account of diversion through Forestport feeder into Black River canal. *c* These figures indicate the flow of the river as regulated at Old Forge dam. *d* These figures indicate the flow of Beaver river as regulated by the sluice-gates and logway at the dam. *e* These figures are not corrected for storage. *f* These figures indicate the flow of Indian river as regulated by the sluice-gates and logways at Indian lake dam. U. S. G. S.— United States Geological Survey. R. C. E.— Rochester City Engineer. S. E.— Department of New York State Engineer. W. Va. P. & P. C.— West Virginia Pulp and Paper Co. A. E. P. C.— Adirondack Electric Power Corporation. S. P. C.— Schenectady Power Company. B. W. S.— New York City Board of Water Supply.

CLIMATOLOGICAL DATA

On the following pages there are published certain records of precipitation at stations throughout the State maintained either by the Department of the State Engineer, by the United States Weather Bureau in coöperation with the Department of the State Engineer, by the Board of Water Supply of New York city or by private corporations or individuals. In connection with each record acknowledgment is made when due.

These records are published under the general headings of St. Lawrence River Drainage Basin and Hudson River Drainage Basin. Under these general heads are grouped the stations on the watersheds of the various streams of the two large drainage basins. The order of arrangement is similar to that of the stream gaging stations.

Stations maintained by the Board of Water Supply are located in territory adjacent to present or possible future sources of water-supply for New York city and are given under the headings "Catskill Watersheds," and "Watersheds at Large," and show monthly totals only.

The precipitation given under any date is the amount occurring during the twenty-four hours ending at 8 A. M. of that date. Precipitation records here given are not intended to embrace all data available, but only such data collected wholly or in part by the State of New York or that is available through the efforts of others than the United States Weather Bureau, whose publications should be consulted in connection with any study made of rainfall or run-off.

ST. LAWRENCE RIVER DRAINAGE BASIN

OAK ORCHARD CREEK WATERSHED

Daily precipitation, in inches, at MEDINA, for the year ended June 30, 1918

DAY	May	June	DAY	May	June	DAY	May	June
1			11			21		
2			12		0.87	22		0.62
3			13			23		0.06
4		0.02	14		0.05	24		
5		0.01	15			25		
6		0.10	16			26	0.34	
7		0.29	17			27	T	
8			18			28	T	
9			19			29	T	
10		0.32	20			30	T	
						31		
						Total	0.34	2.34

NOTE.— Record begun May 21, 1918. T means trace.

CLYDE RIVER WATERSHED

Daily precipitation, in inches, at CLYDE, for the year ended June 30, 1918

DAY	May	June	DAY	May	June	DAY	May	June
1	0.13	....	11	0.26	....	21	....	....
2	....	....	12	0.24	0.96	22	....	1.48
3	T	....	13	0.27	0.05	23	0.13	0.20
4	0.12	....	14	0.08	....	24	....	....
5	....	0.05	15	....	....	25	....	....
6	....	0.02	16	....	....	26	0.13	....
7	0.03	0.20	17	....	....	27	0.11	....
8	0.27	....	18	....	....	28	0.05	....
9	....	T	19	0.04	....	29	T	....
10	0.17	0.21	20	0.37	....	30	0.07	0.05
						31	0.04	....
						Total	2.51	3.22

NOTE.— Record begun May 1, 1918. T means trace.

Daily precipitation, in inches, at MAYS POINT, for the year ended June 30, 1918

DAY	April	May	June	DAY	April	May	June	DAY	April	May	June
1	......	0.14	......	11	......	0.57	......	21	......	......	......
2	......	0.20	......	12	......	......	0.78	22	0.46	......	1.23
3	......	......	......	13	......	0.75	0.08	23	......	0.31	0.14
4	......	0.11	0.04	14	......	0.31	......	24	......	......	0.01
5	......	......	......	15	......	......	......	25	......	......	......
6	......	0.01	......	16	......	......	......	26	......	0.19	......
7	......	......	0.31	17	......	......	......	27	......	0.22	......
8	......	0.05	......	18	0.80	......	......	28	......	0.07	......
9	......	......	......	19	0.01	0.03	......	29	0.05	......	0.10
10	......	......	0.19	20	......	0.48	......	30	0.01	0.11	0.14
								31	......	......	......
								Total	1.33	3.55	3.02

NOTE.— Record begun April 17, 1918.

GANARGUA CREEK WATERSHED

Daily precipitation, in inches, at MACEDON, for the year ended June 30, 1918

DAY	May	June	DAY	May	June	DAY	May	June
1	....	....	11	0.36	....	21	0.61	....
2	....	....	12	0.14	0.80	22	0.01	1.30
3	....	....	13	0.12	0.08	23	0.63	0.12
4	....	....	14	0.10	....	24	....	T
5	....	0.05	15	....	....	25	....	0.02
6	....	0.02	16	....	....	26	0.07	....
7	....	0.38	17	....	....	27	0.17	....
8	0.15	....	18	....	....	28	0.07	....
9	....	....	19	T	....	29	....	0.02
10	0.13	0.20	20	0.02	....	30	0.09	0.02
						31	0.01	....
						Total	2.68	3.01

NOTE.— Record begun May 6, 1918. T means trace.

Daily precipitation, in inches, at NEWARK, for the year ended June 30, 1918

DAY	May	June	DAY	May	June	DAY	May	June
1	0.04	....	11	0.58	....	21	0.61	1.45
2	T	....	12	0.16	0.90	22	....	....
3	....	....	13	0.09	0.10	23	0.45	0.13
4	0.09	....	14	0.15	....	24	....	....
5	....	0.05	15	....	....	25	....	....
6	....	0.02	16	....	....	26	0.21	....
7	....	0.24	17	....	....	27	0.12	....
8	0.47	....	18	....	....	28	0.09	....
9	....	....	19	....	....	29	....	....
10	0.06	0.18	20	0.19	....	30	0.13	....
						31	T	....
						Total	3.44	3.07

NOTE.— Record begun May 1, 1918. T means trace.

SENECA RIVER WATERSHED

Daily precipitation, in inches, at BALDWINSVILLE, for the year ended June 30, 1918

DAY	May	June	DAY	May	June	DAY	May	June
1	0.16	....	11	T	1.11	21	0.65	1.00
2	....	....	12	0.85	0.18	22	0.35	0.27
3	T	....	13	0.54	....	23	....	T
4	0.04	0.06	14	....	....	24	....	....
5	....	....	15	....	....	25	0.97	....
6	T	0.46	16	....	....	26	0.11	....
7	....	....	17	....	....	27	T	....
8	0.06	....	18	....	....	28	....	....
9	....	0.40	19	....	....	29	0.15	1.00
10	0.40	....	20	....	....	30	....	....
						31	....	....
						Total	4.28	4.48

NOTE.— Record begun May 1, 1918. T means trace.

ONEIDA RIVER WATERSHED

Daily precipitation, in inches, at LOCK No. 22, NEAR NEW LONDON, for the year ended June 30, 1918

DAY	May	June	DAY	May	June	DAY	May	June
1	0.37	......	11	0.37	......	21	0.48	......
2	0.05	......	12	0.07	1.05	22	0.14	0.90
3	0.05	......	13	0.30	0.36	23	......	0.19
4	0.01	......	14	0.47	......	24	......	......
5	......	0.05	15	......	T	25	......	......
6	......	......	16	......	......	26	0.72	......
7	T	0.40	17	......	......	27	0.04	......
8	0.66	......	18	......	......	28	0.02	......
9	......	......	19	......	......	29	......	T
10	T	0.64	20	0.07	......	30	0.05	0.54
						31	0.03	......
						Total	3.90	4.13

NOTE.— Record begun May 1, 1918. T means trace.

BLACK RIVER WATERSHED

Daily precipitation, in inches, at BOONVILLE, for the year ended June 30, 1918

DAY	April	May	June	DAY	April	May	June	DAY	April	May	June
1		0.53		11				21	0.62	0.29	0.41
2				12		0.18	0.75	22	0.23		0.38
3		0.19		13		1.06		23		0.55	0.13
4			0.15	14		0.07		24			
5				15				25			
6			0.17	16				26		0.25	
7			1.37	17				27		0.51	
8		0.9		18	0.31			28			
9				19				29			0.31
10		0.58	0.38	20		0.62		30	0.22	0.03	
								31			
								Total	1.38	4.95	4.05

NOTE.— Record begun April 18, 1918.

WOOD CREEK WATERSHED

Daily precipitation, in inches, at SMITH'S BASIN, for the year ended June 30, 1918

DAY	June	DAY	June	DAY	June
1	0.05	11		21	
2		12	0.61	22	0.69
3		13	0.61	23	0.36
4		14	0.01	24	0.01
5	0.29	15		25	
6		16		26	
7	0.63	17		27	
8		18	0.01	28	
9		19		29	
10	0.44	20		30	
				31	
				Total	3.71

NOTE.—Records begun June 1, 1918.

Daily precipitation, in inches, at WHITEHALL, for the year ended June 30, 1918

DAY	May	June	DAY	May	June	DAY	May	June
1		0.03	11			21		
2			12		0.51	22		0.72
3			13		0.14	23		0.23
4			14			24		0.03
5		0.06	15			25		
6			16			26	0.20	
7		0.56	17			27	0.26	
8			18			28	0.51	
9			19			29		
10		0.47	20			30	0.40	
						31		
						Total	1.37	2.75

NOTE.—Record begun May 23, 1918

HUDSON RIVER DRAINAGE BASIN

HUDSON RIVER WATERSHED

Daily precipitation, in inches, at CORINTH, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1			0.15			0.85			0.35		0.32	
2	0.11		0.40									
3												
4				0.60				0.23				
5				0.21					0.18			0.20
6				0.45								
7			0.05				0.40	0.12				1.09
8							0.30		0.26	0.18	0.30	0.10
9		0.67	0.05			0.63		0.23		0.70		
10	0.05	0.25							0.67	0.18	0.12	0.40
11									0.25		0.62	
12	0.65						0.93			0.10		0.81
13	0.05			0.85				0.60				
14						0.85			0.50		0.71	
15	0.10	1.25		0.14					0.18			
16		0.85		0.40			0.82					
17								0.17				
18	0.18									0.15		
19	0.60						0.06			0.10		
20				0.49				1.00			0.18	
21			0.35								0.72	
22					0.45					0.50		1.05
23					1.36		0.10	0.10			0.07	
24		0.80			0.05							
25		0.40		0.78								
26								0.95			0.73	
27											0.33	
28			0.28	0.72	0.05	0.18					0.05	
29		0.22					0.30					0.05
30		0.25	0.30	2.25						0.31	0.42	
31		0.07		1.22								
Total	1.74	4.76	1.58	8.11	1.91	2.51	2.91	3.40	2.39	2.22	4.57	3.70
The yr.												39.80

Maintained by the U. S. Weather Bureau in coöperation with this Department.

Daily precipitation, in inches, at GLENS FALLS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	......	......	......	......	......	0.82	......	......	......	......	......	......
2	0.09	......	0.69	......	......	0.13	......	......	0.32	......	0.55	......
3	......	......	......	......	......	......	......	......	......	......	......	......
4	......	......	......	0.51	......	......	......	0.15	......	......	......	......
5	......	......	......	0.07	......	......	......	......	0.13	......	......	0.25
6	......	......	......	0.50	......	......	0.58	......	......	......	......	......
7	......	......	......	......	......	......	0.12	0.08	0.32	......	......	0.60
8	......	......	......	......	......	......	......	0.12	0.35	......	0.08	......
9	......	0.19	......	0.08	......	0.48	......	0.36	......	0.90	......	......
10	0.04	0.25	0.12	......	......	......	......	......	1.00	0.14	......	0.41
11	......	......	......	......	......	......	......	......	0.10	......	0.83	......
12	0.70	......	......	......	......	......	0.91	......	......	......	......	0.60
13	0.02	......	......	0.77	......	......	......	0.15	......	0.37	0.36	0.36
14	0.16	......	......	......	......	1.01	......	......	0.25	......	1.50	0.05
15	......	0.11	......	0.16	......	......	0.30	0.04	0.45	......	......	......
16	......	1.30	......	0.25	......	......	0.88	......	......	......	......	......
17	......	......	......	......	......	......	......	0.13	......	......	......	......
18	0.04	......	......	......	......	......	......	......	......	0.14	......	......
19	0.69	......	......	......	......	......	......	......	......	0.14	......	......
20	......	......	......	0.47	......	......	0.13	0.81	......	......	0.15	......
21	0.10	......	0.22	......	......	......	......	......	......	0.09	0.54	......
22	......	......	......	......	0.25	......	......	......	......	0.54	......	0.76
23	0.04	......	......	......	1.42	......	0.08	0.10	......	......	0.05	0.13
24	......	0.47	......	0.53	......	......	......	......	......	......	......	......
25	......	1.84	......	0.67	0.05	......	......	......	......	......	......	......
26	......	......	......	......	......	......	0.08	0.86	......	......	0.63	......
27	......	......	......	......	......	......	......	......	......	......	0.47	......
28	......	0.28	0.15	0.88	......	......	......	......	......	......	......	......
29	......	......	......	......	0.03	0.11	0.30	......	......	......	......	......
30	......	0.19	0.43	1.15	......	......	......	......	......	0.23	0.28	......
31	......	0.08	......	1.11	......	......	......	......	......	......	......	......
Total	1.88	4.71	1.61	7.15	1.75	2.55	3.38	2.80	2.92	2.55	5.44	3.16
The yr.	......	......	......	......	......	......	......	......	......	......	......	39.90

Maintained by the U. S. Weather Bureau in coöperation with this Department.

Daily precipitation, in inches, at SCHUYLERVILLE, for the year ended June 30, 1918

DAY	May	June	DAY	May	June	DAY	May	June
1	......	0.19	11	......	......	21	0.31	0.50
2	......	T	12	0.01	1.00	22	0.02	0.72
3	......	......	13	0.59	0.05	23	......	0.30
4	......	0.07	14	0.30	0.05	24	......	......
5	......	......	15	......	T	25	0.55	......
6	......	0.08	16	......	......	26	0.01	......
7	......	0.65	17	......	......	27	0.05	......
8	......	......	18	......	......	28	0.28	......
9	......	......	19	0.02	......	29	0.11	......
10	......	0.54	20	0.32	......	30	0.09	......
						31	0.01	......
						Total	2.67	4.15

NOTE.—Record begun May 12, 1918. T means trace.

Daily precipitation, in inches, at MECHANICVILLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	0.09		0.16	0.10		0.70			0.50		0.39	
2	0.13		0.31			0.13			T		0.33	
3		T								T	0.03	
4				0.28								
5				0.26					0.06			0.03
6				0.22					0.12			
7							0.43	0.20	0.10			0.72
8			0.27				0.18	T	0.08	T	0.06	0.17
9		0.35		0.03		0.10		0.11		0.53		
10	0.02	0.42						0.06	0.62	0.21		0.37
11	T							0.04	0.11		0.80	
12	0.43			T			0.47			T		0.58
13				0.78				0.07		0.22	T	0.21
14	0.04	T				0.47			0.59		1.00	0.01
15	0.43			0.02			0.19		0.41			
16	0.04	0.11		0.27			0.39					
17		0.06					0.04	0.03				
18	0.02			0.01						0.22		
19	0.42						0.10			0.28		
20	0.49			1.28			T	0.54			0.32	
21										0.13	0.34	
22					0.19					0.75	0.08	1.08
23		T			0.70		0.09	T		T	0.06	0.10
24		0.08		T	T					0.27		0.01
25		0.06		0.62		0.04	.03					
26							0.04	0.06			0.36	
27								T	T		0.35	
28			0.20	0.58	0.03	T					0.01	
29	0.02	0.28	T				0.12					
30		0.42	0.25	0.83						0.18	0.02	
31		1.49		1.57							0.02	
Total	2.13	3.27	1.19	6.85	0.92	1.44	2.08	1.11	2.59	2.79	4.17	3.31
The yr.												31.85

Maintained by the U. S. Weather Bureau. T means trace.

Daily precipitation, in inches, at TROY, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1			0.54			0.85			0.67		0.38	
2	*0.26	0.05	0.13								0.65	
3	T							0.02		0.10		
4				0.16								0.03
5				0.21					0.10			
6			0.01	0.13				0.10	0.12			0.13
7		0.05					0.45	0.13	0.29			0.44
8		0.01	0.38	0.06			0.05			0.05		0.16
9	T	0.09				0.15		0.19		0.60		
10		0.87						0.05	0.85	0.15	T	0.18
11	0.05					0.02					0.54	
12	0.43						1.08		T	0.07		0.68
13	0.03			0.75						0.32		
14	0.12					0.67			0.53		1.02	
15	0.07	0.08		0.14			0.82		T			0.02
16	0.64	0.07		0.04								
17		0.01				T	0.10	0.10		0.27		
18	0.15			0.02						0.05		
19	0.03		T				0.08	0.05				
20			T	1.33				0.31			0.38	

Daily precipitation, in inches, at TROY, for the year ended June 30, 1918 — *Continued*

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
21	T									0.62	0.28	
22					0.20		0.10	T			0.06	0.94
23					0.40			0.03	T		0.09	
24		0.26		0.48	0.07	0.03				0.10		
25				0.09			0.08				0.42	
26	T							0.22	T			
27												
28			0.21		0.05	0.04					0.02	
29	T	1.63		*0.65			0.12			T	T	
30		0.51	0.23	1.44			T			0.14	0.09	
31				0.25								
Total	1.78	3.63	1.50	5.75	0.72	1.76	2.88	1.20	2.56	2.47	3.33	2.58
The yr.												30.16

* Precipitation for 48 hours. T means trace.
Maintained by U. S. Weather Bureau.

SACANDAGA RIVER WATERSHED

Daily precipitation, in inches, at NORTHVILLE, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1						0.83			0.40		0.33	
2	0.14	0.18	0.66								0.08	0.08
3												
4	0.10			0.68				0.28				
5				0.29								0.16
6				0.35								
7	0.04						0.41		0.27		0.43	0.90
8			0.03				0.25		0.13			
9		0.52	0.06	0.10		0.44		0.16		0.73		
10	0.41	0.12						0.60	0.80	0.46	0.49	0.51
11									0.13			
12	0.28						0.83			0.23	0.46	0.75
13	0.10			0.68				0.30		0.12	0.48	0.08
14						0.90			0.28			
15		0.52		0.27			0.49	0.10	0.32			0.03
16	0.20		0.01	0.37			0.32					
17								0.17				
18	0.21									0.38		
19	0.14										0.28	
20				0.50	T			1.51			0.25	
21	0.11		0.05							0.10		
22					0.41					0.74		0.76
23					0.98			0.15				0.38
24		1.05		0.11	0.05							0.05
25	0.05			0.51		0.18	0.10				0.40	
26								0.66			0.24	
27					0.12						0.32	
28			0.32	0.40		0.26						
29	0.07	0.39					0.49				0.30	
30		0.15	0.30	2.20						0.43		
31				0.71								
Total	1.85	2.93	1.43	7.17	1.56	2.61	2.89	3.93	2.33	3.19	4.06	3.70
The yr.												37.65

T means trace.
Maintained by U. S. Weather Bureau in coöperation with this Department.

HOOSIC RIVER WATERSHED

Daily precipitation, in inches, at HOOSICK FALLS, for the year ended June 30, 1918*

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
1	0.13			0.09		0.62		0.03
2	0.37		0.40	0.08		0.32		
3	0.02	0.18						
4				0.20				
5				0.23				
6				0.32				
7		0.24	0.40				0.20	0.30
8			0.06				0.34	
9		0.05		0.07		0.09	0.04	0.08
10		0.67	0.08					0.14
11				0.02				0.09
12	0.70						0.49	
13	0.17			0.72			0.05	0.15
14						0.45		
15	0.50	0.16		0.08		0.06		0.02
16	0.04	0.32		0.22			0.65	0.04
17		0.72						0.11
18	0.05	T		0.02			0.06	0.03
19	0.01				T		0.03	
20	0.86			0.65	0.03		0.12	0.62
21								
22					0.36			
23					0.52		0.15	0.02
24		0.07			T			
25		0.15		0.22	0.02	0.22		
26							0.08	0.28
27								0.49
28	T		0.07	0.45	0.05			0.04
29		0.27	0.05		0.03		0.07	
30		0.65	0.13	0.26				
31		0.52		1.10				
Total	2.85	4.00	0.83	4.73	1.01	1.76	2.28	2.44

* Record not taken during March, April, May and June. T means trace.
Maintained by the U. S. Weather Bureau in coöperation with this Department.

MOHAWK RIVER WATERSHED

Daily precipitation, in inches, at DELTA DAM, for the year ended June 30, 1918

DAY	April	May	June	DAY	April	May	June	DAY	April	May	June
1		0.42		11		0.56		21	0.29	0.96	
2		0.14		12		T	0.66	22	0.49		1.04
3		0.13		13	0.15	0.38	0.26	23	0.01	0.51	0.14
4		T		14		0.46		24			
5			0.08	15				25			
6				16				26		0.39	
7			0.55	17				27		0.18	
8		0.51		18	0.41			28			
9	0.48			19				29			
10		T	0.50	20				30	0.12	0.06	0.57
								31		0.03	
								Total	1.95	4.73	3.80

NOTE.— Record begun April 1. T means trace.

Daily precipitation, in inches, at Adrean Reservoir[a], near Utica, for the year ended June 30, 1918

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	0.04		0.02	0.25		0.35			0.36		0.45	0.13
2	0.20	0.22	0.36	0.07		0.02				0.02	0.27	0.12
3	0.55	0.02									0.16	
4				0.20				0.05				
5				0.17				0.02	0.19			0.09
6				0.12				0.24	0.17			
7			0.09	0.10			0.18	0.24	0.25			0.59
8			0.13				0.11	0.05	0.02	0.30	0.11	0.03
9	0.14	0.85		0.40		0.16	0.02	0.23		0.65		
10		0.40	0.21				0.09	0.13	0.05	0.19		0.61
11	0.24					0.06	0.06	0.12	0.02		0.28	
12	0.44						0.29	0.02		0.26		1.28
13	0.07			0.43			0.14	0.25		0.27	0.65	0.50
14	0.13	0.02				0.45			0.58		0.32	
15	0.30	0.05		0.10		0.11	0.04	0.04	0.15			
16	1.28	0.85		0.30	0.05		0.32	0.08				
17		0.11				0.02	0.03	0.05				
18	0.02						0.05	0.02		0.45		
19	0.50			1.20	0.12		0.10			0.02		
20				0.02			0.02	0.28				
21	0.07		0.02				0.10	0.04		0.10	0.70	
22	0.40				0.21			0.02		0.51		0.80
23		0.04		0.14	0.30		0.08			0.10	0.20	0.38
24		0.46		0.38	0.03		0.12			0.07		0.03
25		0.09		0.10		0.20	0.08	0.26				
26					0.02	0.03	0.06		0.06		0.54	
27				0.40				0.05	0.04		0.46	
28			0.25	0.02	0.08	0.03	0.10				0.15	
29		0.68		0.80		0.02	0.02					0.03
30	0.20	0.27	0.75							0.16	0.08	0.64
31		0.11		0.95							0.07	
Total	4.08	4.17	1.83	6.15	0.81	1.45	2.01	2.19	1.89	3.10	4.44	5.23
The yr												37.3_5

[a] Formerly Savage reservoir.
Supplied by the Consolidated Water Company of Utica.

Daily precipitation, in inches, at Deerfield Reservoir, Utica, for the year ended June 30, 1918

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1				0.37		0.52			0.27		0.45	0.03
2	0.16	0.42	0.16	0.11		0.03				0.03	0.24	0.21
3			0.20		0.03						0.08	
4				0.48				0.06			0.01	
5				0.25					0.17			0.05
6			0.08	0.12				0.02	0.08			
7			0.05	0.04			0.30	0.18	0.19			0.44
8			0.05				0.09			0.25	0.10	0.01
9	0.28	0.96		0.52		0.10	0.02	0.30		1.23		
10		0.12	0.14				0.01	0.42	0.60	0.16		0.72
11	0.28					0.02	0.02	0.13	0.04		0.11	
12	0.27						0.40			0.12		1.21
13	0.16			0.43			0.02	0.23		0.30	0.71	0.40
14	0.44	0.04		0.02		0.58			0.18		0.48	
15	0.40	0.17		0.18		0.03	0.13	0.02	0.05			

Daily precipitation, in inches, at DEERFIELD RESERVOIR, UTICA, for the year ended June 30, 1918 — *Continued*

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
16.....	0.28	0.07	0.03	0.32	0.13	......	0.20	......	......	......	......	......
17.....	......	0.04	......	......	......	......	0.04	0.05	......	......	......	......
18.....	0.30	......	......	0.02	......	......	0.01	0.01	......	0.54	......	......
19.....	0.09	......	......	0.96	0.12	......	0.09	0.03	......	......	......	......
20.....	0.01	......	0.31	......	......	......	0.02	0.53	......	......	0.37	......
21.....	0.04	0.01	0.11	......	......	......	0.01	......	......	0.14	0.68	......
22.....	0.54	......	0.06	......	0.33	......	......	......	......	0.54	......	0.75
23.....	......	0.39	......	0.08	0.30	......	0.04	......	......	0.01	0.29	0.23
24.....	......	0.54	......	0.50	......	......	0.02	......	......	......	......	0.02
25.....	......	0.05	......	0.08	......	0.14	0.06	0.18	......	......	......	......
26.....	......	......	......	......	......	0.02	0.05	......	......	......	0.35	......
27.....	......	......	......	0.38	......	......	......	0.03	0.02	......	0.46	......
28.....	......	0.03	0.48	0.16	0.05	0.01	......	......	......	......	0.10	......
29.....	......	0.37	0.01	1.00	......	......	0.05	......	......	......	......	......
30.....	0.05	0.13	0.74	......	......	......	......	......	......	0.24	0.12	0.22
31.....	......	0.05	......	0.55	......	......	......	......	......	......	0.06	......
Total...	3.30	3.39	2.42	6.57	0.96	1.45	1.58	2.19	1.69	3.56	4.61	4.30
The yr..	......	......	......	......	......	......	......	......	......	......	......	36.02

Supplied by the Consolidated Water Company of Utica.

Daily precipitation, in inches, at GRAEFENBURG (RESERVOIR No. 1), NEAR UTICA, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1.....	......	......	......	0.20	......	0.25	......	......	0.06	......	0.46	......
2.....	0.20	0.10	0.35	......	......	......	......	......	......	0.02	0.30	......
3.....	0.10	......	......	......	......	......	......	......	......	......	0.10	......
4.....	......	......	......	0.40	......	......	......	0.10	......	......	......	......
5.....	......	......	0.05	0.20	......	......	......	0.06	0.04	......	......	0.06
6.....	......	......	......	0.15	......	......	......	......	0.35	......	......	......
7.....	......	......	0.12	0.20	......	......	0.60	0.10	0.06	......	......	0.45
8.....	......	......	0.18	......	......	......	0.20	......	0.03	0.10	0.05	0.12
9.....	0.12	......	......	0.20	......	0.20	0.06	0.07	......	0.50	......	......
10.....	......	0.15	0.25	......	......	......	0.07	......	0.60	0.25	......	0.50
11.....	0.11	......	......	......	......	0.10	0.06	0.10	0.06	......	0.30	......
12.....	0.45	......	......	......	......	......	0.75	......	......	0.03	......	1.20
13.....	......	......	......	0.30	......	......	......	0.28	......	0.30	0.60	0.50
14.....	0.10	......	......	0.20	......	0.35	......	......	0.10	......	0.22	......
15.....	0.15	......	......	......	......	0.15	0.25	......	0.50	......	......	......
16.....	0.36	0.52	......	......	0.10	......	0.45	0.08	......	......	......	......
17.....	......	0.15	......	......	......	......	......	0.05	......	......	......	......
18.....	0.05	0.05	......	......	......	......	0.12	0.03	......	0.40	......	......
19.....	0.11	......	......	0.95	0.10	......	0.15	......	......	......	......	......
20.....	......	......	......	......	......	......	0.04	0.60	......	......	......	......
21.....	0.05	0.02	......	......	......	......	0.15	0.04	......	......	0.60	......
22.....	0.25	......	......	......	0.18	......	0.04	......	......	0.65	......	0.70
23.....	......	0.02	......	0.10	0.32	......	0.06	......	......	0.05	0.10	0.30
24.....	......	0.50	......	0.40	......	......	0.10	......	......	......	......	0.02
25.....	......	......	......	0.10	......	0.18	0.09	0.30	......	......	......	......
26.....	......	......	......	......	......	......	0.08	......	0.04	......	0.60	......
27.....	......	......	......	0.50	......	......	0.03	0.06	0.02	......	0.40	......
28.....	......	0.05	0.18	......	0.05	......	......	......	......	......	0.60	......
29.....	......	0.75	0.15	0.55	......	......	0.18	......	......	......	......	......
30.....	0.32	0.20	0.65	......	......	......	......	......	......	0.15	0.05	0.55
31.....	......	0.10	......	0.90	......	......	......	......	......	......	......	......
Total...	2.37	2.61	1.93	5.35	0.75	1.23	2.94	1.87	1.86	2.45	4.38	4.40
The yr..	......	......	......	......	......	......	......	......	......	......	......	32.14

Supplied by the Consolidated Water Company of Utica.

Daily precipitation, in inches, at GENESEE ST. BRIDGE, UTICA, for the year ended June 30, 1918*

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Aptil
1	0.01	.....	0.20	0.22	T	0.07	.....	0.02	0.12	.....
2	0.17	0.47	0.15	0.07	0.04	0.02	.....	.....	T	0.06
3	0.21	.....	.....	.....	.....	T	.....	T	.....	.....
4	0.05	.....	.....	0.32	T	.....	.....	0.11	T	.....
5	.....	.....	0.07	0.21	.....	0.12	.....	0.01	0.16	.....
6	.....	.....	0.06	0.13	.....	0.01	.....	T	0.05	.....
7	.....	.....	0.04	0.12	T	.....	0.03	0.23	0.40	.....
8	.....	T	0.10	.....	.....	.....	0.06	T	0.08	0.27
9	T	1.09	.....	0.45	.....	0.11	0.12	0.41	.....	0.91
10	0.34	0.16	0.14	.....	.....	.....	0.10	0.17	0.52	0.36
11	0.32	.....	.....	.....	.....	0.09	0.08	0.14	0.18	.....
12	0.31	.....	.....	0.07	T	.....	0.45	T	.....	0.20
13	0.06	.....	.....	0.45	.....	.....	0.02	0.21	T	0.23
14	0.56	0.02	.....	.....	.....	0.60	.....	.....	0.14	.....
15	0.21	0.10	.....	0.12	.....	0.07	0.15	0.04	0.05	.....
16	0.46	0.25	T	0.07	0.04	0.01	0.46	0.06	T	.....
17	.....	0.01	.....	.....	.....	T	0.02	0.12	.....	.....
18	0.07	.....	.....	0.05	.....	T	0.01	0.01	.....	0.43
19	0.10	.....	.....	.....	0.11	.....	0.08	0.01	.....	0.01
20	.....	.....	.....	1.01	0.04	T	0.04	0.36	.....	T
21	0.06	0.01	0.25	0.05	.....	.....	0.08	0.04	.....	0.08
22	0.59	.....	.....	.....	0.07	0.01	T	T	.....	0.44
23	.....	0.27	.....	.....	0.28	T	0.11	0.01	.....	T
24	.....	0.49	.....	0.03	0.04	0.01	0.13	.....	.....	0.06
25	0.01	0.08	.....	0.80	0.03	0.15	0.10	.....	.....	T
26	.....	.....	.....	0.06	0.02	0.04	0.08	0.20	0.01	.....
27	.....	.....	.....	.....	.....	.....	T	0.32	0.03	.....
28	.....	0.01	0.30	0.40	0.01	0.01	.....	.....	T	.....
29	0.01	0.50	.....	0.10	0.02	0.02	0.09	.....	.....	.....
30	0.25	0.15	0.81	0.88	.....	.....	T	.....	.....	0.18
31	.....	0.10	.....	0.84	.....	.....	.....	.....	.....	.....
Total	3.79	3.71	2.12	6.45	0.70	1.24	2.21	2.47	1.74	3.23

* Record not taken during May and June. T means trace.
Maintained by the U. S. Weather Bureau in coöperation with this Department.

Daily precipitation, in inches, at CANAJOHARIE, for the year ended June 30, 1918

DAY	June	DAY	June	DAY	June
1	.....	11	.....	21	.....
2	.....	12	.....	22	1.05
3	.....	13	.....	23	0.15
4	.....	14	T	24	T
5	.....	15	.....	25	.....
6	.....	16	.....	26	.....
7	.....	17	.....	27	.....
8	.....	18	.....	28	.....
9	.....	19	.....	29	.....
10	.....	20	.....	30	0.15
				Total	1.35

NOTE.— Record begun June 14. T means trace.

Daily precipitation, in inches, at TRIBES HILL, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1						0.20			0.20			
2	0.20	0.10	0.45								0.35	
3	0.15											
4				0.70				0.10				
5									0.10			
6			0.30	0.30				0.20	0.10			
7							0.30		0.40			1.32
8												
9		0.71				0.40		0.10				
10	0.40	0.10		0.10				0.10		1.40	0.45	
11	0.40						0.10		0.30			
12							0.50					
13	0.13			0.85				0.40		0.40	0.40	0.60
14	1.00					1.90					0.62	
15		0.20							1.70			
16	1.02	0.17		0.58			1.00					
17								0.30				
18										0.55		
19	0.41							0.40				
20				0.65								
21					0.10						0.28	
22								0.05		0.60		1.00
23					1.10							0.90
24		2.30			0.10	0.30						
25				0.94				0.20				
26												
27											0.59	
28			0.30	0.30	0.10							
29	0.20	0.30					0.20					
30		0.50	0.10	1.76	0.30					0.60		0.10
31				0.85								
Total	3.91	4.38	1.15	7.03	1.70	2.80	2.10	1.85	2.80	3.55	2.69	3.92
The yr.												37.88

Maintained by the United States Weather Bureau.

Daily precipitation, in inches, at SCOTIA, for the year ended June 30, 1918

DAY	June	DAY	June	DAY	June
1		11		21	1.30
2		12	0.75	22	0.07
3		13	0.05	23	0.02
4		14		24	
5		15		25	
6		16		26	
7		17		27	
8		18		28	
9		19		29	
10		20		30	
				Total	2.19

NOTE.— Record begun June 12, 1918.

WEST CANADA CREEK WATERSHED

Daily precipitation, in inches, at HOFFMEISTER, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	0.16	0.01	0.67			T			T		0.23	
2			0.02	0.06	T	0.07				0.07	0.29	
3				0.90	T			0.34				
4			0.01	0.46				T	0.30			0.24
5			0.16	0.18		0.08	T					
6								0.45	T		T	0.86
7			0.08				0.60	T	0.33		0.19	
8				0.31		0.36	0.04		T	T		
9	0.41	1.37	0.05			T		0.53		0.27		0.54
10	0.30						0.03	0.09	1.08		0.30	
11	0.20		0.07									0.66
12	T			1.41			0.68	0.10		0.03		0.29
13				0.30		0.79	0.03				1.50	T
14	0.13	0.97		0.25		T	T		1.40			T
15	0.04	0.04		0.41			0.97	T				
16		0.50			T			0.16				
17	0.23	0.10			T	T	T	T		0.70		
18	0.03			0.09			T					
19				1.08	0.08		0.17	1.50		T	0.03	
20	0.04	0.04	0.32				T	T			0.99	
21	0.25		0.02			T				0.82		
22		0.13			0.62		0.08	0.12			0.55	0.79
23		1.20		T			T			T		0.02
24	0.04	0.05		0.74	T	0.30	T					
25		0.02		0.15		T	0.12				0.40	
26							T	0.30	T		0.40	
27				0.82			0.26	T	T			
28		0.68	0.67		0.16	0.35	0.69	0.28				
29	0.05	0.12	0.69				T			0.25		T
30			0.61	2.05	0.92					0.38	0.55	0.79
31							T				T	
Total	1.88	5.23	3.37	9.21	1.78	1.95	3.67	3.87	3.11	2.52	5.43	4.19
The yr.												46.21

T means trace.

Daily precipitation, in inches, at HINCKLEY, for the year ended June 30, 1918

DAY	April	May	June	DAY	April	May	June	DAY	April	May	June
1				11				21	0.37	0.90	
2				12	0.25		0.66	22	0.65		0.77
3				13	0.60		0.19	23	0.01	0.28	0.39
4				14				24			
5			0.12	15				25			
6				16				26			
7			0.81	17				27		0.55	
8	0.08			18	0.52			28			
9				19	T			29			0.11
10			0.54	20				30	0.22		
								31			
								Total	2.70	1.73	3.59

NOTE.— Record for May believed to be incomplete. T means trace.

Daily precipitation, in inches, at TRENTON FALLS, for the year ended June 30, 1918

DAY	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
1	......	......	T	0.47	T	0.72	......	......	T	......	0.21	T
2	0.25	0.09	T	T	0.08	0.30	......	......	......	T	0.25	......
3	......	......	......	......	T	......	......	......	......	T	0.13	......
4	0.05	......	......	0.86	T	......	......	0.29	......	......	......	......
5	......	......	......	0.68	......	0.06	......	T	0.45	......	......	T
6	......	......	0.10	0.48	......	T	......	T	0.09	......	......	......
7	......	......	0.18	......	......	......	0.37	0.36	0.25	......	......	0.87
8	......	......	0.05	T	......	......	0.19	0.03	T	......	0.48	......
9	......	1.80	......	0.43	......	0.20	0.09	0.33	......	0.97	T	......
10	0.43	0.40	0.20	......	......	0.03	0.03	......	0.70	0.07	......	0.70
11	0.41	......	......	......	......	T	0.02	0.34	0.15	......	0.29	......
12	0.40	......	......	T	......	......	0.25	......	......	0.23	T	0.75
13	......	T	......	0.83	......	......	0.06	0.34	......	0.13	0.48	0.23
14	0.40	0.09	......	......	......	1.38	......	......	0.09	......	0.37	T
15	0.05	0.40	......	0.55	......	0.07	0.28	0.05	0.48	......	......	......
16	0.71	......	......	0.39	0.20	......	0.25	0.03	T	......	......	......
17	......	......	......	......	......	0.03	0.06	0.10	......	......	......	......
18	0.22	0.05	......	......	T	......	......	0.05	......	0.50	......	......
19	0.26	......	0.05	......	T	......	0.02	......	......	T	......	......
20	0.10	......	0.18	1.80	0.14	......	T	1.05	......	......	......	......
21	0.08	0.22	......	......	......	......	0.08	......	......	0.30	0.48	......
22	0.19	T	0.06	......	0.20	T	0.05	......	......	0.64	......	0.75
23	......	0.17	......	T	0.22	......	T	T	......	0.02	0.28	0.30
24	......	0.50	......	0.02	T	T	T	......	......	T	......	T
25	......	0.15	......	0.85	0.03	0.20	0.03	......	......	......	......	......
26	......	......	......	0.27	......	......	0.03	0.13	......	......	0.29	......
27	......	......	......	......	0.15	......	......	T	0.01	......	0.17	......
28	......	0.09	0.65	0.49	T	0.21	0.08	......	T	......	......	......
29	......	0.40	0.56	T	......	0.04	0.10	......	......	......	......	0.65
30	0.08	0.35	......	0.76	......	......	T	......	......	0.27	0.10	......
31	......	0.13	......	0.65	......	......	......	......	......	......	0.12	......
Total	3.63	4.84	2.03	9.53	1.02	3.26	1.99	3.10	2.22	3.13	3.65	4.25
The yr.	......	......	......	......	......	......	......	......	......	......	......	42.65

T means trace.
Maintained by the U. S. Weather Bureau in coöperation with this Department.

CATSKILL WATERSHEDS

Stations maintained by the Board of Water Supply of New York city.

Monthly rainfall, in inches, on CATSKILL WATERSHEDS, for the year ended June 30, 1918

STATION	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
ESOPUS CREEK												
Phoenicia *a*	2.70	10.00	1.18	8.90	1.00	3.11	3.52	2.70	3.05	4.48	4.58	3.17
Slide Mountain *a*	4.02	6.20	1.22	12.00	0.92	3.26	4.21	4.44	3.20	6.21	4.95	3.66
Highmount *a*	2.66	8.05	1.40	9.67	0.50	1.96	2.42	2.40	2.24	3.27	4.22	3.63
Edgewood *a*	3.74	5.44	1.06	9.61	1.05	2.65	3.00	1.61	2.65	4.29	6.49	2.48
Lake Hill *a*	4.92	5.02	1.10	7.72	0.98	2.21	3.60	2.16	2.82	4.08	4.70	3.27
Overlook Mountain	5.23	4.72	0.88	5.99	1.38	2.48	*i*	.....	.....	.....	.....	.....
Kingston	4.02	5.64	0.99	5.53	0.80	2.42	*b*4.02	2.84	2.50	4.45	5.01	3.12
West Hurley *a*	4.02	5.04	1.01	5.65	0.98	1.86	*c*4.06	*c*2.19	2.48	3.70	5.60	3.14
Brown Station *a*	2.86	7.73	0.70	5.77	1.24	2.09	3.97	2.49	2.62	4.21	3.36	2.97
Moonhaw *a*	4.42	8.36	1.29	7.60	1.89	3.12	3.82	3.20	3.54	*d*	.....	.....
West Shokan	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.79	2.91	3.99
Zena	6.08	5.43	1.01	5.22	0.96	2.41	4.06	2.19	2.80	3.78	4.74	2.84
Coldbrook	3.76	6.36	1.15	6.61	0.96	1.84	2.79	2.64	*f*2.14	4.36	4.24	3.40
Big Indian *e*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.02	3.60
RONDOUT CREEK												
Grahamsville	6.12	7.32	1.33	6.63	1.59	2.06	3.36	4.01	2.27	4.06	2.78	3.94
Bull Run	4.90	7.89	*g*	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sundown	.....	.....	1.24	6.84	1.44	2.45	3.40	3.68	3.08	4.36	3.82	3.97
Peekamoose	5.28	10.95	1.32	8.53	1.82	2.90	*h*	*h*	*h*	4.86	3.30	4.31
Lackawack	5.57	5.18	1.13	6.24	1.15	2.13	4.06	3.02	2.34	4.28	3.13	2.62
Claryville	5.66	8.90	1.54	7.24	1.49	1.80	*i*	.....	.....	.....	.....	.....
Rosendale	3.93	5.17	0.85	5.77	0.91	2.58	4.02	2.76	2.24	4.01	3.33	3.05
SCHOHARIE CREEK												
Windham	1.34	6.50	0.92	8.12	0.54	2.05	2.94	1.60	2.23	4.10	4.45	2.26
Haines Falls	2.31	4.60	1.47	10.22	0.92	2.95	*i*	.....	.....	.....	.....	.....
Elka Park *j*	.....	.....	.....	.....	0.90	3.34	4.18	3.06	3.16	5.77	7.08	4.00
Lexington	1.74	5.72	1.25	7.42	0.66	2.00	2.84	1.42	2.12	3.38	4.88	3.29
Prattsville	2.36	6.44	1.05	7.96	1.24	1.72	2.81	2.08	2.68	4.11	3.69	2.99
Grand Gorge	2.95	6.10	0.96	7.64	1.00	1.70	2.02	1.72	2.76	3.65	3.88	3.16
Stamford *k*	4.94	6.88	1.44	8.11	0.90	2.12	2.20	2.16	3.06	3.24	4.30	4.24
Manorkill *l*	.....	.....	0.98	8.29	0.86	2.34	2.64	1.12	2.31	3.58	4.00	2.48
Esperance *m*	.....	.....	.....	.....	1.12	2.34	2.34	1.20	2.17	3.62	2.64	3.08
Gilboa *n*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.98
CATSKILL CREEK												
Preston Hollow	1.18	5.52	0.98	7.08	0.86	2.28	2.60	0.94	2.74	3.48	3.86	2.24
Oak Hill	1.11	4.00	0.80	6.82	0.79	2.30	2.66	1.14	2.82	4.44	3.72	2.40
Franklinton	2.45	7.36	1.64	7.34	0.90	2.36	*i*	.....	.....	.....	.....	.....
Westerlo	1.35	4.87	1.16	6.66	0.92	2.00	2.02	0.90	2.02	3.14	4.08	2.59

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a Transferred to Department of Water Supply, March 1, 1918. *b* Rosendale. *c* Zena. *d* Gage relocated at West Shokan, April 13, 1918; el., 900 ft. ±. *e* Established by Department of Water Supply, April 13, 1918; el., 1,220 ft. ±. *f* Gage leaky March 14; replaced before next rainfall. *g* Gage removed to el. 1,780 ft., 1¼ miles south of Sundown, September 1, 1917. *h* No record; use Slide Mountain. *i* Discontinued. *j* Standard 8-inch U. S. W. B. gage established November 13, 1917; el., 2,170 ft. *k* Standard U. S. W. B. gage established July 2, 1917; el., 1,775 ft. *l* Standard 8-inch U. S. W. B. gage established August 19, 1917; el., 1,515 ft. *m* Standard 8-inch U. S. W. B. gage established November 13, 1917; el., 2,170 ft. *n* Standard 8-inch U. S. W. B. gage established June 5, 1918; el., 1,000 ft.

Mean monthly rainfall, in inches, on CATSKILL WATERSHEDS

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Tota for year
						ESOPUS CREEK — ABOVE OLIVE BRIDGE DAM							
1906	2.85	2.26	4.80	3.85	5.01	6.16	4.42	3.76	3.18	5.47	2.26	4.08	48.10
1907	2.59	1.66	1.20	2.17	3.83	3.45	3.13	1.17	11.49	6.78	7.06	5.80	50.33
1908	3.49	6.40	2.93	2.98	9.23	2.29	6.32	2.04	2.46	4.21	0.57	2.58	45.50
1909	4.82	6.97	4.35	5.20	4.48	4.38	2.06	4.83	4.17	1.40	1.98	4.63	49.27
1910	7.61	4.37	0.93	10.18	2.95	4.59	2.02	3.93	5.21	1.02	3.70	2.30	48.81
1911	2.60	1.94	3.90	2.37	1.06	5.94	3.19	4.83	4.25	7.50	3.50	2.91	43.99
1912	2.38	2.96	5.96	5.76	4.36	1.72	3.25	7.47	3.44	4.84	4.08	4.70	50.92
1913	4.26	2.28	7.70	3.81	3.74	1.01	1.90	4.86	4.02	6.76	5.60	2.93	48.87
1914	3.40	2.44	4.02	5.94	2.99	3.18	3.49	3.91	0.56	2.97	3.32	3.69	39.91
1915	6.85	5.32	0.21	2.16	2.27	2.96	8.59	8.93	2.99	2.48	3.90	5.86	52.52
1916	1.64	4.48	3.23	2.63	3.35	5.33	8.14	1.96	4.23	3.15	4.37	2.98	45.49
1917	4.14	2.15	3.53	2.47	4.27	6.72	4.04	6.58	1.09	7.70	1.08	2.45	46.22
Mean	3.89	3.60	3.56	4.13	3.96	3.98	4.21	4.52	3.92	4.52	3.45	3.74	47.49
						RONDOUT CREEK — ABOVE HONK FALLS AND LACKAWACK							
1906	2.69	2.64	3.91	4.54	4.34	5.23	5.51	4.47	3.87	4.40	2.15	4.20	47.95
1907	3.43	1.93	1.93	2.19	3.68	3.69	2.95	1.88	9.42	5.50	6.32	5.03	47.95
1908	3.12	6.24	3.53	4.02	7.64	1.75	5.08	2.59	2.64	3.74	0.72	3.09	44.16
1909	4.82	6.61	3.99	4.71	3.36	4.39	2.07	4.46	3.54	1.25	1.86	4.47	45.53
1910	7.07	4.53	1.03	8.30	3.60	4.22	2.34	4.08	5.25	1.18	3.36	2.25	47.21
1911	3.44	1.99	4.42	3.11	1.16	6.57	3.27	5.14	4.17	7.10	3.43	3.08	46.88
1912	2.24	2.41	5.86	5.77	3.59	1.91	2.82	7.32	3.79	3.92	3.02	4.78	47.43
1913	5.05	2.61	7.65	4.67	3.46	1.44	3.38	6.04	4.20	6.53	4.74	2.72	52.49
1914	3.33	2.13	3.57	4.91	2.98	4.28	4.06	4.14	0.71	2.64	2.74	3.82	39.31
1915	6.63	5.41	0.33	2.33	3.00	3.45	9.83	7.17	3.03	2.57	3.40	6.11	53.26
1916	2.35	4.87	3.84	3.64	3.71	5.76	9.08	2.19	5.31	3.25	3.95	3.61	51.56
1917	4.04	2.76	3.92	2.15	3.32	6.76	5.51	8.05	1.31	7.10	1.48	2.25	48.65
Mean	4.02	3.68	3.66	4.20	3.65	4.12	4.66	4.79	3.94	4.10	3.10	3.78	47.70
						SCHOHARIE CREEK — ABOVE PRATTSVILLE							
1907	2.05	1.54	1.04	2.33	3.46	3.27	3.28	0.76	8.29	5.51	6.08	4.66	42.27
1908	2.93	5.51	2.31	2.68	7.53	2.22	4.36	2.32	2.82	4.31	0.44	2.01	39.44
1909	4.12	4.82	3.38	4.47	4.24	4.19	1.53	3.23	3.17	1.35	1.85	4.14	40.49
1910	6.67	3.42	0.62	7.76	3.07	5.03	1.54	2.23	4.22	0.80	4.94	1.45	41.75
1911	1.85	1.13	2.13	1.43	1.43	6.09	2.06	4.16	3.21	4.68	1.99	1.79	31.95
1912	1.66	2.14	4.06	4.88	3.64	1.52	2.60	3.84	3.48	3.31	3.14	2.86	37.13
1913	2.78	2.00	5.24	3.22	3.05	1.58	1.46	3.56	3.16	5.34	5.59	1.94	38.92
1914	2.28	2.28	4.50	5.22	3.27	2.96	4.22	4.71	0.87	1.93	2.72	2.62	37.58
1915	4.18	4.09	0.22	2.21	2.19	2.34	8.01	7.50	3.77	2.32	2.53	5.54	44.90
1916	1.06	4.31	2.81	2.66	2.82	4.02	6.44	4.72	4.22	2.11	3.13	2.12	40.42
1917	3.11	1.30	2.62	1.71	4.04	5.63	2.61	6.03	1.15	8.25	0.88	2.28	39.61
Mean	2.97	2.96	2.63	3.51	3.52	3.53	3.46	3.91	3.49	3.63	3.03	2.86	39.50

Note for Esopus creek.— Jan., 1906, to Nov., 1906, inclusive, average of 6 stations. Dec. 1906, average of 7 stations. Jan., 1907, to June, 1907, inclusive, average of 8 stations. July, 1907, and Aug., 1907, average of 11 stations. Sept., 1907, to Dec., 1909, inclusive, average of 12 stations. Jan., 1910, average of 11 stations. Feb., 1910, and Mar., 1910, average of 12 stations. April, 1910, to Jan., 1915, inclusive, average of 10 stations. Feb., 1915, and Mar., 1915, average of 11 stations. April, 1915, average of 10 stations. May to Oct., 1915, inclusive, average of 11 stations. Nov. and Dec., 1915, average of 12 stations. Jan., 1916, to Mar., 1916, inclusive, average of 13 stations. April, 1916, average of 12 stations. May to Nov., 1916, inclusive, average of 13 stations. Dec., 1916, average of 12 stations. Jan., 1917, and Feb., 1917, average of 12 stations. Mar., 1917, to Dec., 1917, inclusive, average of 11 stations.

Note for Rondout creek.— Jan., 1906, to Dec., 1906, inclusive, average of 4 stations. Jan., 1907, to Mar., 1910, inclusive, average of 6 stations. April, 1910, to Dec., 1917, inclusive, average of 5 stations.

Note for Schoharie creek.— Jan., 1907, to June, 1907, inclusive, average of 6 stations. July, 1907, to Dec., 1907, inclusive, average of 7 stations. Jan., 1908, to Mar., 1910, inclusive, average of 5 stations. April, 1910, to April, 1917, inclusive, average of 4 stations. May and June, 1917, average of 5 stations. July and Aug., 1917, average of 6 stations. Sept. and Oct., 1917, average of 7 stations. Nov. and Dec., 1917, average of 8 stations.

Mean monthly rainfall, in inches, on CATSKILL WATERSHEDS—*Continued*

YEAR	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total for year
						CATSKILL CREEK — ABOVE OAK HILL							
1907..........	1.92	1.28	1.16	2.38	3.25	3.15	3.31	0.85	6.58	4.18	4.91	3.52	36.49
1908..........	2.43	4.01	1.83	2.15	5.86	1.58	4.00	3.01	1.59	3.35	0.39	1.57	31.77
1909..........	3.56	3.76	2.79	3.00	3.92	3.52	2.36	2.47	2.74	0.96	1.50	3.59	34.17
1910..........	4.67	3.02	0.48	5.70	2.94	4.82	1.21	1.55	4.07	0.91	3.57	0.92	33.86
1911..........	1.32	1.13	2.07	1.55	1.41	7.06	2.20	3.38	2.94	4.32	1.45	1.87	30.70
1912..........	1.71	2.12	3.50	4.50	3.36	1.08	2.63	3.80	3.27	3.86	2.78	2.37	34.98
1913..........	2.66	1.87	4.60	3.05	3.18	2.16	1.83	1.37	2.67	4.89	4.73	1.83	34.84
1914..........	2.10	2.14	4.78	5.32	3.26	2.50	3.97	4.18	0.64	1.53	2.49	2.43	35.34
1915..........	3.40	3.31	0.09	2.03	1.91	2.60	6.93	7.20	2.78	2.22	2.60	5.66	40.73
1916..........	1.09	4.01	3.28	3.56	2.88	3.22	4.42	3.70	3.67	1.82	2.76	2.11	36.52
1917..........	1.76	1.46	2.49	2.07	4.12	4.01	1.49	5.65	1.08	7.38	0.81	2.22	34.54
Mean.........	2.42	2.56	2.46	3.21	3.28	3.25	3.12	3.38	2.91	3.22	2.54	2.55	34.90

Note for Catskill creek.— Jan., 1907, to Dec., 1907, inclusive, average of 6 stations. Jan., 1908, to Aug., 1917, average of 5 stations. Sept., 1917, to Dec., 1917, inclusive, average of 6 stations.
EMENDATION.— Catskill creek, total for year 1908 incorrectly published as 33.77 instead of 31.77 in Report of State Engineer for 1916, Vol. 2, page 430, and for 1917, Vol. 2, page 444.

WATERSHEDS AT LARGE

Stations maintained by the Board of Water Supply of New York city.

Monthly rainfall, in inches, on various watersheds for the year ended June 30, 1918

STATION	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June
						ROELIFF JANSEN KILL						
Silvernails..........	5.26	5.30	1.10	5.47	0.58	1.81	*a*	.....	.....	.....	.....	.....
						WAPPINGER CREEK						
Pleasant Valley.....	5.99	3.26	0.83	5.23	0.63	3.02	*a*	.....	.....	.....	.....	.....
						PEEKSKILL CREEK						
Nelsonville.........	3.24	4.50	0.68	6.95	0.57	3.36	4.20	2.86	1.34	4.80	4.09	2.35
Peekskill...........	4.87	2.60	0.96	7.95	0.65	4.16	3.07	2.37	1.09	3.34	4.10	2.78
						WALLKILL RIVER						
Shaft No. 1, Wallkill *b*	3.34	3.57	0.90	5.31	0.86	.....	.....	.....	.....	.....	.....	.....
Wallkill Blow-off....	.....	.....	.....	.....	.....	1.40	3.62	4.23	1.85	4.46	4.76	2.88
Sherwood Corner....	2.84	4.84	0.85	*c* 5.31	0.44	2.82	4.64	3.02	2.36	*a*	.....	.....
						MOODNA CREEK						
Cornwall...........	3.68	4.27	0.76	5.28	0.55	3.15	3.75	2.01	1.27	3.92	*a*	.....

a Discontinued. *b* Gage removed from New Paltz, June 9, 1917, to Shaft No. 1, Wallkill; El 476 ft. ±. Rainfall for June, 1917, 5.02 inches. *c* Shaft No. 1, Wallkill.

INDEX

Supplement to the Annual Report of the State Engineer and Surveyor of New York, 1918

A PAGE
Abandoned gaging stations 7
Acknowledgments 7
Adrean reservoir, near Utica, precipitation 395
Albany, Hudson river, gaging station 251–3
Alder creek, drainage area 64
Allegheny river drainage basin, description and gaging station at Red House 375–9, 385
Allen's creek, drainage area 34
Alloway, Canandaigua outlet, gaging station 112–4, 384
Alplaus kill, drainage area 285
Angelica creek, drainage area 34
Appropriations for stream gaging 8, 13
Auburn, Owasco outlet, gaging station 116–8, 384
Ausable Forks, Ausable river, gaging station 197–9, 384
Ausable river:
  Description 196
  Drainage areas 181, 196
  Gaging stations:
    Ausable Forks 197–9, 384
    Newman, West branch 199–200
Ayers creek, drainage area 287

B

Baldwinsville, above dam, Seneca river, gaging station 96–7
Baldwinsville, below dam, Seneca river, gaging station 98
Baldwinsville, precipitation 368
Ballou creek, drainage area 282
Barge canal, Indian Castle, gaging station 301
Barge canal, Smith's Basin, above lock No. 9, gaging station 189
Beards creek, drainage area 34
Beaver kill:
  Drainage area 343
  Gaging station at Cooks Falls 361–3, 385
Beaver river, description and gaging station at Beaver River village 164–7, 384
Beaver River village, Beaver river, gaging station 164–7, 384
Belgium, Seneca river, gaging station 99–100
Big Bay creek, drainage area 65
Big brook, drainage area 281
Big Chazy river, drainage area 181
Big creek, Oneida county, drainage area 282

PAGE

Big creek, Washington county, drainage area 181
Big Indian, precipitation 401
Big Sprite creek, drainage area 287
Black brook, drainage area 66
Black creek, Allegany county, drainage area 34
Black creek, Herkimer county, drainage area 286
Black creek, Monroe county:
- Description 59
- Drainage area 34
- Gaging station near Genesee Junction 60

Black creek, Oswego county, drainage area 67
Black River canal, Boonville, gaging station 151–3
Black river drainage basin:
- Description 145
- Gaging stations:
  - Beaver River village, Beaver river 164–7, 384
  - Black River village, Black river 156–8, 384
  - Boonville, Black river 145–8, 384
  - Boonville, Black River canal 151–3
  - Boonville, Forestport feeder 149–51
  - Felts Mills, Black river 153–5, 384
  - Moose River village, Moose river 159–61, 384
  - Old Forge, Middle branch, Moose river 161–3, 384
- Precipitation at Boonville 389

Black River village, Black river, gaging station 156–8, 384
Board of Water Supply, New York city, records furnished 7
Boonville, Black River canal, gaging station 151–3
Boonville, Black river, gaging station 145–8, 384
Boonville, Forestport feeder, gaging station 149–51
Boonville, precipitation 389
Bouquet river, drainage area 181
Bradley brook, drainage area 281
Brasher Center, St. Regis river, gaging station 179–80, 384
Brewerton, Oneida river, gaging station 125
Brown Station, precipitation 401
Bull Run, precipitation 401
Burlington, Vt., Lake Champlain, gaging station 184–5
Buttermilk creek, drainage area 66
Butternut creek:
- Description 136
- Drainage areas 64–5
- Gaging station at Jamesville 136–40, 384

C

Canada creek, drainage area 64
Canadice lake:
- Description 61
- Elevation and area 34
- Gaging station near Hemlock 61–2, 384

PAGE

- Canajoharie creek, drainage area 284
- Canajoharie, Mohawk river, gaging station 304
- Canajoharie, precipitation 397
- Canandaigua lake, drainage areas 65
- Canandaigua outlet:
  - Description 111–2
  - Drainage areas 66
  - Gaging station at Alloway 112–4, 384
- Canaseraga creek, Livingston county:
  - Description 50
  - Drainage area 34
  - Gaging stations:
    - Cumminsville 50–2
    - Groveland Station 52–4, 384
    - Shakers Crossing 55–6
    - Sonyea, Keshequa creek 57–9, 384
- Canaseraga creek, Madison county, drainage areas 64
- Caneadea creek, drainage area 34
- Carpenter brook, drainage area 67
- Cascadilla creek, drainage area 66
- Castleton river, drainage area 181
- Catherine creek, drainage area 66
- Catskill creek watershed, precipitation records 401, 403
- Catskill watersheds, precipitation 401–3
- Cattaraugus creek, description and gaging station at Versailles 24–7, 384
- Caughdenoy creek, drainage area 65
- Caughdenoy, Oneida river, gaging station 126–9, 384
- Cayadutta creek, drainage area 284
- Cayuga, Cayuga lake, gaging station 106–7
- Cayuga inlet, drainage area 66
- Cayuga lake:
  - Description 105
  - Drainage areas 66
  - Gaging stations:
    - Cayuga 106–7
    - Ithaca 105–6
- Cayuga, near Free bridge, Seneca river, gaging station 92
- Cazenovia lake:
  - Area 134
  - Drainage area 64
  - Storage 134
- Cedar river, Indian Lake village, gaging station 255–6, 385
- Central Bridge, Schoharie creek, gaging station 341
- Chadakoin river:
  - Description 380
  - Gaging stations:
    - Jamestown, at boat landing 380–1
    - Jamestown, at Warner dam 382–3
  - Water-surface elevations 381, 383

- Champlain canal:
  - Gaging stations: PAGE
    - Comstock, above lock No. 11 191
    - Comstock, below lock No. 11 192
    - Smith's Basin, above lock No. 9 189
    - Smith's Basin, below lock No. 9 190
    - Whitehall, above lock No. 12 193
- Champlain, Lake. (*See* "Lake Champlain drainage basin.")
- Chateaugay river, drainage area 23
- Chemung, Chemung river, gaging station 372–4, 385
- Chemung river:
  - Description 372
  - Gaging station at Chemung 372–4, 385
- Chenango Forks, Chenango river, gaging station 369–71, 385
- Chenango river basin, drainage areas diverted to Mohawk river basin 281
- Chenango river, Chenango Forks, gaging station 369–71, 385
- Chenunda creek, drainage area 34
- Chittenango creek:
  - Description 134–5
  - Drainage areas 64–5
  - Gaging station at Chittenango 135
- Claryville, precipitation 401
- Climatological data 7–9, 386–403
- Clockville creek, drainage area 64
- Clyde, Clyde river, gaging station 109
- Clyde, precipitation 387
- Clyde river:
  - Description 107–8
  - Drainage area 66
  - Gaging stations:
    - Clyde 109
    - Lyons 108
  - Precipitation records 387
  - Water-surface elevations 108–9
- Cohoes, above Crescent dam, Mohawk river, gaging station 315, 318
- Cohoes, above dam, Mohawk river, gaging station 318–9
- Cohoes, below Crescent dam, Mohawk river, gaging station 315–6
- Coldbrook, Esopus creek, gaging station 344–5, 385
- Coldbrook, precipitation 401
- Cold creek, drainage area 34
- Comstock, Wood creek, gaging stations 191–2
- Conesus lake outlet, drainage area 34
- Conklin, Susquehanna river, gaging station 366–9, 385
- Conservation Commission, coöperation with 7
- Conversion table 19–20
- Cooks Falls, Beaver kill, gaging station 381–3, 385
- Corinth, Hudson river, gaging station 219
- Corinth, precipitation 390
- Cornwall, precipitation 403

Coshaqua creek. (*See* "Keshequa creek.") PAGE
Cowaselon creek, drainage areas.............................. 64
Crawford creek, drainage area................................ 34
Crescent dam, gaging stations...............................315-8, 385
Crocker's reef dam, Hudson river, gaging station...............225-8, 385
Cross lake, Jordan, Seneca river, gaging station................ 95
Crum creek, drainage area.................................... 283
Cryder creek, drainage area.................................. 34
Cumminsville, Canaseraga creek, gaging station.................. 50-2

D

Dansville, near, Canaseraga creek, gaging station. (*See* "Cumminsville.")
Deerfield reservoir, Utica, precipitation........................ 395-6
Delaware river drainage basin:
  Description 355
  Gaging stations:
    Cooks Falls, Beaver kill................................361-3, 385
    Fish Eddy, East branch, Delaware river...................356-8, 385
    Hale Eddy, West branch, Delaware river...................363-5, 385
    Port Jervis, Delaware river.............................358-60, 385
Delta dam, precipitation 394
Delta reservoir, gaging station............................... 289
De Ruyter reservoir, description 140-1
De Ruyter reservoir, drainage area 65
Discharges, summary table of................................. 384-5
Dolgeville, East Canada creek, gaging station..................332-4, 385
Drainage areas, tables of:
  Ausable river 196
  Chenango river basin, areas diverted to Mohawk river basin.... 281
  East Canada creek... 287
  Esopus creek 343
  Genesee river 34
  Lake Champlain 181
  Mohawk river 280-8
  Oneida river 64-5
  Oswego river 67
  Rondout creek 349
  Saranac river 201
  Schoharie creek 288
  Seneca river 65-7
  St. Lawrence river 23
  West Canada creek 285-6
  (*For* tributaries of the above *see* names of streams.)
Dunsbach Ferry, Mohawk river, gaging station.................. 313-4
Dyke's creek, drainage area.................................. 34

E PAGE

Eagle Bridge, Hoosic river, gaging station....271-3, 385
East Canada creek:
  Description 332
  Drainage areas 283, 287
  Gaging station at Dolgeville....332-4, 385
East Crum creek, drainage area.... 283
East Koy creek, drainage area.... 34
East Red creek, drainage area.... 65
Eaton brook, drainage area.... 281
Edgewood, precipitation 401
Elka Park, precipitation 401
Elmwood avenue, Rochester, Genesee river, gaging station.... 49, 384
English river, drainage area.... 23
Equivalents, table of 19-20
Erie canal, Indian Castle, gaging station.... 301
Erie canal, Pendleton, gaging station.... 27-8
Erie canal, Tonawanda, gaging station 28-9
Erieville reservoir:
  Area 134
  Drainage area 64
  Storage 134
Esopus creek:
  Description 343
  Drainage areas 343
  Gaging stations:
    Coldbrook 344-5, 385
    Mount Marion 346-8
  Precipitation records 401, 402
Esperance, precipitation 401

F

Fall brook, drainage areas.... 64
Fall creek, drainage areas.... 66
Fayetteville, Limestone creek, gaging station.... 143
Fayetteville, Limestone feeder, gaging station.... 144
Felts Mills, Black river, gaging station....153-5, 384
Fish creek, drainage areas.... 64
Fish Eddy, East branch, Delaware river, gaging station....356-8, 385
Flat creek, drainage area.... 284
Flint creek, drainage areas.... 66
Florence creek, drainage area.... 64
Fonda, Fultonville bridge, Mohawk river, gaging station.... 305
Forestport feeder, Boonville, gaging station.... 149-51
Fort Edward, canal terminal, Hudson river, gaging station.... 224-5
Fort Hunter, Schoharie creek, gaging station.... 341-2
Fort Miller, above dam, Hudson river, gaging station.... 229
Fort Miller, below dam, Hudson river, gaging station.... 230
Fort Montgomery, Rouses Point, Richelieu river, gaging station... 185-6
Fort Plain, Mohawk river, gaging station.... 303

PAGE
Four-Mile brook, drainage area........................ 286
Frankfort, Mohawk river, gaging station........................ 295
Franklinton, precipitation 401
Free bridge, Liberty Mills, Hudson river, gaging station........................ 232
Free bridge, near Cayuga, Seneca river, gaging station........................ 92
Fulton, above lower dam, Oswego river, gaging station........................ 75
Fulton, above upper dam, Oswego river, gaging station........................ 73
Fulton, below lower dam, Oswego river, gaging station........................ 76
Fulton, below upper dam, Oswego river, gaging station........................ 74
Fulton, mouth of Ox creek, Oswego river, gaging station........................ 72
Fultonville bridge, Fonda, Mohawk river, gaging station........................ 305
Furnace creek, drainage area........................ 64

G

Gages, standard types 8
Gaging stations:
  Abandoned 7
  Accuracy of data 9, 16
  New, established 8
  Number maintained 9
Ganargua creek:
  Description 110
  Drainage areas 65
  Gaging station near Palmyra........................ 110–1
  Precipitation records 387–8
  Water-surface elevations 111
Garoga creek, drainage area........................ 284
Genesee Junction, Black creek, Monroe county, gaging station........................ 60
Genesee Junction, Genesee river, gaging station........................ 45
Genesee river drainage basin:
  Description 33–4
  Drainage areas 34
  Gaging stations:
    Cumminsville, Canaseraga creek 50–2
    Genesee Junction, Black creek, Monroe county........................ 59–60
    Genesee Junction, Genesee river 45
    Groveland Station, Canaseraga creek........................52–4, 384
    Hemlock, Canadice lake outlet........................61–2, 384
    Jones bridge, Genesee river........................41–4, 384
    Rochester, Elmwood avenue, Genesee river........................ 49, 384
    Rochester, Genesee river 45–8, 384
    Scio, Genesee river 35–7, 384
    Shakers Crossing, Canaseraga creek........................ 55–6
    Sonyea, near, Keshequa creek........................57–9, 384
    St. Helena, Genesee river........................38–41, 384
  Water-surface elevations 45, 49, 60
Geneva, Seneca lake, gaging station........................ 104

Geological Survey, U. S.: PAGE
  Coöperation 7–11
  Report 12
Gilboa, precipitation 401
Gillett creek, drainage area.. 287
Glen creek, Schuyler county, drainage area.. 66
Glens Falls, above feeder dam, Hudson river, gaging station........ 223–4
Glens Falls, at Varney farm, Hudson river, gaging station........ 222–3
Glens Falls feeder, discharge measurements 275
Glens Falls, precipitation 391
Gorham swamp, drainage area.. 66
Graefenburg, near Utica, precipitation.. 396
Grahamsville, precipitation 401
Grand Gorge, precipitation 401
Grass river, drainage area.. 23
Groveland Station, Canaseraga creek, gaging station..............52–4, 384

H

Hadley, Sacandaga river, gaging station........................267–9, 385
Haines Falls, precipitation.. 401
Hale Eddy, West branch, Delaware river, gaging station..........363–5, 385
Halfway creek, drainage area.. 181
Harrison's Mill, near Palmyra, Ganargua creek, gaging station..... 110–1
Harrisville, West branch, Oswegatchie river, gaging station......173–5, 384
Hemlock, Canadice lake outlet, gaging station..................61–2, 384
Hemlock lake, elevation and area.. 34
Herkimer, Mohawk street, Mohawk river, gaging station............ 297
Herkimer, near, Kast Bridge, West Canada creek, gaging station..329–31, 385
Herkimer, Washington street, Mohawk river, gaging station........ 298
Heuvelton, Oswegatchie river, gaging station..................168–70, 384
Highmount, precipitation 401
Hinckley, precipitation 399
Hinckley reservoir, gaging station.. 324
Hinmansville, Oswego river, gaging station.. 71
Hoffmeister, precipitation 399
Honeoye creek, drainage area.. 34
Honeoye lake, elevation and area.. 34
Honnedaga brook, drainage area.. 285
Honnedaga lake, drainage area.. 285
Hoosick Falls, Hoosic river, gaging station.. 270
Hoosick Falls, precipitation.. 394
Hoosic river:
  Description 269
  Gaging stations:
   Eagle Bridge 271–3, 385
   Hoosick Falls 270
   Schaghticoke 273–5, 385
  Precipitation at Hoosick Falls.. 394

PAGE

Hope, Sacandaga river, gaging station 265–6, 385
Hudson river drainage basin:
  Description 205–9
  Gaging stations:
    Albany, Hudson river 251–3
    Coldbrook, Esopus creek 344–5
    Corinth, Hudson river 219
    Crocker's reef dam, Hudson river 225–8, 385
    Eagle Bridge, Hoosic river 271–3, 385
    Fort Edward, canal terminal, Hudson river 224–5
    Fort Miller, above dam, Hudson river 229
    Fort Miller, below dam, Hudson river 230
    Glens Falls, above feeder dam, Hudson river 223–4
    Glens Falls, at Varney farm, Hudson river 222–3
    Hadley. Sacandaga river 267–9, 385
    Hoosick Falls, Hoosic river 270
    Hope, Sacandaga river 265–6, 385
    Indian Lake village, Cedar river 255–6, 385
    Indian Lake village, Hudson river 210–2, 385
    Indian Lake village, Indian lake reservoir 257–8
    Indian Lake village, Indian river 259–61, 385
    Lackawack, Rondout creek 349–51, 385
    Liberty Mills, Free bridge, Hudson river 232
    Mechanicville, above dam No. 2, Hudson river 243
    Mechanicville, above dam No. 3, Hudson river 238
    Mechanicville, at dam of Adirondack Electric Power Corporation, Hudson river 245–6, 385
    Mechanicville, below dam No. 2, Hudson river 244
    Mechanicville, below dam No. 3, Hudson river 239
    Mechanicville, Toll bridge, Hudson river 242
    Mechanicville, West Virginia Pulp and Paper Co.'s mill, Hudson river 240–1, 385
    Mount Marion, Esopus creek 346–8
    North Creek, Hudson river 213–5, 385
    Northumberland, above lock No. 5, Hudson river 231
    Northumberland, below lock No. 5, Hudson river 233
    Riverbank, Schroon river 261–3, 385
    Rosendale, Rondout creek 352–4, 385
    Schaghticoke, Hoosic river 273–5, 385
    Schuylerville, Hudson river 234
    Spier Falls, Hudson river 220–2, 385
    Stillwater, above lock No. 4, Hudson river 236
    Stillwater, below dam, Hudson river 235
    Stillwater, below lock No. 4, Hudson river 237
    Thurman, Hudson river 216–8, 385
    Troy, above Federal dam, Hudson river 249
    Troy, below Federal dam, Hudson river 250–1
    Waterford, above dam No. 1, Hudson river 247

Hudson river drainage basin — *Continued:*
  Gaging stations — *Continued:* PAGE
    Waterford, below dam No. 1, Hudson river.............. 248
    (*See also* "Mohawk river drainage basin.")
  Precipitation records 390–403
  Water-surface elevations 223–5, 227–37, 247–53
Hudson river, tides 254
Hydraulic data:
  Accuracy of data 16
  Conversion table 19–20
  Explanation 17–8
  Terms defined 17–8

I

Ilion, Mohawk river, gaging station.............................. 296
Indian Castle, Mohawk river, gaging station.................... 301
Indian lake reservoir, Indian Lake village, gaging station.......... 257–8
Indian Lake village, Cedar river, gaging station...............255–6, 385
Indian Lake village, Hudson river, gaging station............209–12, 385
Indian Lake village, Indian lake reservoir, gaging station......... 257–8
Indian Lake village, Indian river, gaging station.............259–61, 385
Indian river, Indian Lake village, gaging station..............259–61, 385
Instructions regarding stream gages............................ [illegible]
Ithaca, Cayuga lake, gaging station............................ 105–6

J

Jack's Reef, Seneca river, gaging station........................ [illegible]
Jamestown, at boat landing, Chadakoin river, gaging station........ 380–1
Jamestown, at Warner dam, Chadakoin river, gaging station...... 382
Jamesville, Butternut creek, gaging station...................136–40, [illegible]
Jones bridge, Genesee river, gaging station.................... 41–4, [illegible]
Jordan, Cross lake, Seneca river, gaging station................. [illegible]

K

Kast Bridge, West Canada creek, gaging station...............329–31, [illegible]
Keshequa creek:
  Description .... [illegible]
  Drainage areas .... [illegible]
  Gaging station near Sonyea.............................57–9, [illegible]
Keuka lake:
  Description .... [illegible]
  Drainage area .... [illegible]
  Gaging station at Penn Yan.............................. [illegible]
Keuka outlet, drainage area...................................
Kingsley brook, drainage area.................................. [illegible]
Kingston, precipitation .... [illegible]
Knight's creek, drainage area.................................. [illegible]

L

PAGE

- **Lackawack precipitation** 401
- **Lackawack, Rondout creek, gaging station** 349-51, 385
- **Lake Champlain drainage basin:**
  - **Description** 181-2
  - **Drainage areas** 23, 181-2
  - **Gaging stations:**
    - **Ausable Forks, Ausable river** 197-9, 384
    - **Burlington, Vt., Lake Champlain** 184-5
    - **Comstock, above lock No. 11, Wood creek** 191
    - **Comstock, below lock No. 11, Wood creek** 192
    - **Fort Montgomery, Rouses Point, Richelieu river** 185-6
    - **Newman, West branch, Ausable river** 199-200
    - **Plattsburg, Saranac river** 201-4, 384
    - **Rogers Rock, Lake George** 194-5
    - **Smith's Basin, above dam, Wood creek** 188
    - **Smith's Basin, above lock No. 9, Barge canal** 189
    - **Smith's Basin, below lock No. 9, Wood creek** 190
    - **Whitehall, above lock No. 12, Wood creek** 193
    - **Whitehall, Lake Champlain** 183-4
  - **Precipitation records** 389
  - **Water-surface elevations** 182, 184, 188-93
- **Lake George, gaging stations** 194
- **Lake George outlet, drainage area** 181
- **Lake George, Rogers Rock, gaging station** 194-5
- **Lake Hill, precipitation** 401
- **Lake Ontario drainage. (*See* " Black river drainage basin," " Genesee river drainage basin," " Niagara river drainage " *and* " Oswego–Oneida–Seneca river drainage basin.")**
- **Lake Ontario, Oswego, gaging station** 86-7
- **Lake Placid, water-surface and drainage area** 196
- **Lamoille river, drainage area** 181
- **Lansingkill, drainage area** 280
- **Lexington, precipitation** 401
- **Liberty Mills, Free bridge, Hudson river, gaging station** 232
- **Limestone creek:**
  - **Description** 140-1
  - **Drainage areas** 65
  - **Gaging stations:**
    - **Fayetteville** 143
    - **Manlius** 141-2
- **Limestone feeder, Fayetteville, gaging station** 144
- **Linden, Little Tonawanda creek, gaging station** 30-2, 384
- **Little Ausable river, drainage area** 181
- **Little Bay creek, drainage area** 65
- **Little Chazy river, drainage area** 181
- **Little Falls, above State dam, Mohawk river, gaging station** 299
- **Little Falls, at lock No. 17, Mohawk river, gaging station** 300
- **Little river, drainage area** 64

PAGE
Little Salmon river, drainage area.............................. 23
Little Tonawanda creek, Linden, gaging station..................30-2, 384
Liverpool, near Long Branch, Onondaga outlet, gaging station...... 120
Liverpool, near Mud lock, Seneca river, gaging station.............. 99
Long Branch, near Mud lock, Seneca river, gaging station.......... 99
Long Branch, Onondaga outlet, boat-house, gaging station........ 120-1
Long Branch, Onondaga outlet, gaging station.................... 120
Lyons. Clyde river, gaging station............................ 108
Lyons, near Alloway bridge, Canandaigua outlet, gaging station..112-4, 384

M

Macedon, precipitation 387
Mad river, drainage area.................................... 64
Manlius, Limestone creek, gaging station....................... 141-2
Manorkill, precipitation 401
Mays Point, precipitation 387
Mechanicville, above dam No. 2, Hudson river, gaging station.... 243
Mechanicville, above dam No. 3, Hudson river, gaging station...... 238
Mechanicville, at dam of Adirondack Electric Power Corporation, Hudson river, gaging station.................................245-6, 385
Mechanicville, below dam No. 2, Hudson river, gaging station...... 244
Mechanicville, below dam No. 3, Hudson river, gaging station..... 239
Mechanicville, precipitation 392
Mechanicville, Toll bridge, Hudson river, gaging station.......... 242
Mechanicville, West Virginia Pulp and Paper Co.'s mill, Hudson river, gaging station....................................240-1, 385
Medina, precipitation 386
Memphis, Jack's Reef, Seneca river, gaging station............... 96
Mettawee river, drainage area................................ 181
Middleburg, Schoharie creek, gaging station...................338-40, 385
Middle Sprite creek, drainage area.............................. 287
Mill creek, drainage area.................................... 286
Minetto, Oswego river, gaging station.........................77-80, 384
Missisquoi river, drainage area................................ 181
Mohawk river drainage basin:
  Description 276-80
  Discharge measurements, miscellaneous, Rome and Oriskany.... 342
  Drainage areas 280-8
  Gaging stations:
    Canajoharie, Mohawk river.............................. 304
    Central Bridge, Schoharie creek.......................... 341
    Cohoes, above Crescent dam, Mohawk river..........315, 318, 385
    Cohoes, above dam, Mohawk river...................... 318-9
    Cohoes, below Crescent dam, Mohawk river............. 315-6
    Delta dam, Delta reservoir.............................. 289
    Dolgeville, East Canada creek.........................332-4, 385
    Dunsbach Ferry, Mohawk river......................... 313-4
    Fonda, Fultonville bridge, Mohawk river................ 305

Mohawk river drainage basin — *Continued:*

Gaging stations — *Continued:* PAGE

Fort Hunter, Schoharie creek.......................... 341-2

Fort Plain, Mohawk river............................. 303

Frankfort, Mohawk river.............................. 295

Herkimer, Mohawk street, Mohawk river................ 297

Herkimer, Washingston street, Mohawk river............ 298

Hinckley dam, Hinckley reservoir...................... 324

Ilion, Mohawk river 296

Indian Castle, Barge canal............................ 301

Kast Bridge, West Canada creek........................329-31, 385

Little Falls, above State dam, Mohawk river............ 299

Little Falls, at lock No. 17, Mohawk river.............. 300

Middleburg, Schoharie creek...........................338-40, 385

Prattsville, Schoharie creek...........................336-7, 385

Rexford, Mohawk river................................ 307-8

Ridge Mills, above dam, Mohawk river.................. 289-90

Ridge Mills, below dam, Mohawk river.................. 290

Rome, above retention dam, Mohawk river............... 292-3

Rome, above State dam, Mohawk river.................. 291

Rome, below retention dam, Mohawk river............... 293

Rome, below State dam, Mohawk river.................. 292

Schenectady, Mohawk river 307

Schoharie Junction, Schoharie creek.................... 341

Stittville, Nine-Mile creek, Mohawk river............... 321-2

St. Johnsville, Mohawk river 302

Trenton Falls, at Morgan dam, West Canada creek........ 328

Trenton Falls, at power dam, West Canada creek........325-7, 385

Tribes Hill, Mohawk river............................. 306

Utica, Mohawk river 294

Vischer Ferry, above dam, Mohawk river................ 309, 385

Vischer Ferry, at dam, Mohawk river.................310-3, 385

Vischer Ferry, below dam, Mohawk river..............309-10, 385

Waterford, Mohawk river 319-20

Precipitation records 394-400

Water-surface elevations ..289-310, 314-6, 319-20, 324, 328, 330, 341-2

Montezuma, Seneca river, gaging station.................... 93

Moodna creek watershed, precipitation at Cornwall............... 403

Moonhaw, precipitation 401

Moose river:

Description 158-9

Gaging stations:

Moose River village..............................159-61, 384

Old Forge, Middle branch..........................161-3, 384

Moose River village, Moose river, gaging station...............159-61, 384

Mosquito Point, Seneca river, gaging station..................... 94

Mount Marion, Esopus creek, gaging station.....................346-8, 385

Mount Morris, near, Jones bridge, Genesee river, gaging station....41-4, 384

PAGE

Mount Morris, near, Shakers Crossing, Canaseraga creek, gaging station 55-6
Mounts creek, drainage area 286
Moyer creek, drainage area 283
Mud creek, Oneida county, drainage area 64
Mud creek, Onondaga county, drainage area 65
Mud creek, Ontario county, drainage area 65
Mud lock, near Long Branch, Seneca river, gaging station 99

N

Naples creek, drainage area 65
Neatahwanta creek, drainage area 67
Nelsonville, precipitation 403
Newark, precipitation 388
New gaging and precipitation stations established 8
New London, precipitation 388
Newman, West branch, Ausable river, gaging station 199-200
Newton Falls, East branch, Oswegatchie river, gaging station 171-3, 384
New York city, Board of Water Supply, records furnished 7
Niagara river drainage:
  Description 23
  Gaging stations:
    Linden, Little Tonawanda creek 30-2, 384
    Pendleton, Erie canal 27-8
    Tonawanda, above State dam, Erie canal 28-9
    Tonawanda, Niagara river 23-4
    Versailles, Cattaraugus creek 24-7, 384
  Water-surface elevations 24, 28-9
Nine-Mile creek, Oneida county:
  Description 321
  Drainage area 281
  Gaging station near Stittville 321-2
  Water-surface elevations 322
Nine-Mile creek, Onondaga county, drainage area 67
North Chuctanunda creek, drainage area 285
North creek, drainage area 287
North Creek, Hudson river, gaging station 213-5, 385
Northumberland, above lock No. 5, Hudson river, gaging station 231
Northumberland, below lock No. 5, Hudson river, gaging station 233
Northville, precipitation 393
Nowadaga creek, drainage area 283

O

Oak Hill, precipitation 401
Oak Orchard creek, Medina, precipitation 386
Oak Orchard, Oneida river, gaging station 129-30
Old Forge, Middle branch, Moose river, gaging station 161-3, 384
Oneida creek, drainage areas 64

Oneida lake: PAGE
  Description 131–2
  Drainage areas 65
  Gaging station at Sylvan Beach........................ 133
Oneida river drainage basin. (*See* "Oswego–Oneida–Seneca river drainage basin.")
Onondaga creek:
  Description 121–2
  Drainage area 67
  Gaging station at South Onondaga, West branch............. 122–3
Onondaga lake:
  Description 118
  Drainage area 67
  Gaging stations:
    Long Branch, boat-house, Onondaga outlet 120–1
    Long Branch, Onondaga outlet 120
    Syracuse, Onondaga lake 119
Onondaga outlet, drainage area 67
Onondaga outlet, Long Branch, boat-house, gaging station 120–1
Onondaga outlet, Long Branch, gaging station.................. 120
Ontario, Lake, Oswego, gaging station.......................... 86–7
Oriskany creek, drainage area............................ 282
Oriskany feeder, discharge measurements.................... 342
Oswegatchie river:
  Description 168
  Drainage area 23
  Gaging stations:
    Harrisville, West branch 173–5, 384
    Heuvelton 168–70, 384
    Newton Falls, East branch............................171–3, 384
Oswego, above curved dam, east side, Oswego river, gaging station.. 85–6
Oswego, above curved dam, Oswego river, gaging station........... 84–5
Oswego, at new High dam, Oswego river, gaging station..........80–4, 384
Oswego, Lake Ontario, gaging station.......................... 86–7
Oswego–Oneida–Seneca river drainage basin:
  Description 63
  Drainage areas 64–7
  Gaging stations, Oneida river basin:
    Brewerton, Oneida river 125
    Caughdenoy, Oneida river 126–9, 384
    Chittenango, Chittenango creek 135
    Fayetteville, Limestone creek 143
    Fayetteville, Limestone feeder 144
    Jamesville, Butternut creek 136–40, 384
    Manlius, Limestone creek 141–2
    Oak Orchard, Oneida river........................... 129–30
    Sylvan Beach, Oneida lake........................... 133
    Three River Point, Oneida river....................... 130–1

Oswego–Oneida–Seneca river drainage basin — *Continued:*

- Gaging stations, Oswego river: PAGE
  - Fulton, above lower dam ... 75
  - Fulton, above upper dam ... 73
  - Fulton, below lower dam ... 76
  - Fulton, below upper dam ... 74
  - Fulton, mouth of Ox creek ... 72
  - Hinmansville ... 71
  - Minetto ... 77–80, 384
  - Oswego, above curved dam ... 84–5
  - Oswego, above curved dam, east side ... 85–6
  - Oswego, at new High dam ... 80–4, 384
  - Oswego, Lake Ontario ... 86–7
  - Phoenix, above dam ... 68–9
  - Phoenix, below dam ... 70
- Gaging stations, Seneca river basin:
  - Alloway, Canadaigua outlet ... 112–4, 384
  - Auburn, Owasco outlet ... 116–8, 384
  - Baldwinsville, above dam, Seneca river ... 96–7
  - Baldwinsville, below, dam, Seneca river ... 98
  - Belgium, Seneca river ... 99–100
  - Cayuga, Cayuga lake ... 106–7
  - Clyde, Clyde river ... 109
  - Cross lake, Jordan, Seneca river ... 95
  - Free bridge, near Cayuga, Seneca river ... 92
  - Geneva, Seneca lake ... 104
  - Ithaca, Cayuga lake ... 105–6
  - Jack's Reef, Seneca river ... 96
  - Long Branch, boat-house, Onondaga outlet ... 120–1
  - Long Branch, Onondaga outlet ... 120
  - Long Branch, Seneca river ... 99
  - Lyons, Clyde river ... 108
  - Montezmuma, Seneca river ... 93
  - Mosquito Point, Seneca river ... 94
  - Mud lock, near Long Branch, Seneca river ... 99
  - Palmyra, Ganargua creek ... 110–1
  - Penn Yan, Keuka lake ... 101
  - Seneca Falls, above dam, Seneca river ... 91
  - South Onondaga, West branch, Onondaga creek ... 122–3
  - Syracuse, Onondaga lake ... 119
  - Waterloo, above dam, Seneca river ... 89
  - Waterloo, below lock No. 4, Seneca river ... 90
  - Watkins, Seneca lake ... 103
- Oneida river basin:
  - Description ... 123–4
  - Drainage areas ... 64–5
  - Precipitation record ... 388
  - Water-surface elevations ... 125, 127–8, 130–3, 135, 143–4

Oswego-Oneida-Seneca river drainage basin — *Continued:*

PAGE

  Oswego river basin:
    Description 68
    Drainage areas 67
    Water-surface elevations 69-76, 78-9, 82-3, 85-7
  Seneca river basin:
    Description 87-8
    Drainage areas 65-7
    Precipitation records 387-8
    Water-surface elevations 89-100, 103-4, 106-9, 111, 113, 119-21
Otisco lake, drainage area 67
Otter creek, drainage area 181
Overlook Mountain, precipitation 401
Owasco lake, drainage areas 66
Owasco outlet:
  Description 115
  Drainage area 66
  Gaging station near Auburn 116-8, 384
Ox creek, drainage area 67
Ox creek, mouth of, Oswego river, gaging station 72

P

Palmyra, Ganargua creek, gaging station 110-1
Payne brook, drainage area 281
Peekamoose, precipitation 401
Peekskill creek watershed, precipitation records 403
Peekskill, precipitation 403
Pendleton, Erie canal, gaging station 27-8
Penn Yan, Keuka lake, gaging station 101
Phillips creek, drainage area 34
Phoenicia, precipitation 401
Phoenix, above dam, Oswego river, gaging station 68-9
Phoenix, below dam, Oswego river, gaging station 70
Phoenix, near, Hinmansville bridge, Oswego river, gaging station.... 71
Piercefield, Raquette river, gaging station 176-8, 384
Pike river, drainage area 181
Placid, Lake, water-surface and drainage area 196
Plattekill, drainage area 343
Plattsburg, Saranac river, gaging station 201-4, 384
Pleasant Valley, precipitation 403
Point Rock creek, drainage area 64
Port Jervis, Delaware river, gaging station 358-60, 385
Potts creek, drainage area 65
Poultney river, drainage area 181
Powell's bridge, near Stittville, Nine-Mile creek, gaging station.... 321-2
Prattsville, precipitation 401
Prattsville, Schoharie creek, gaging station 336-7, 385
Precipitation records 7-9, 386-403
  (*See also* names of localities.)

PAGE

Precipitation stations, new, established........................ 8
Preston Hollow, precipitation.................................. 401

R

Rain gages 7-9, 386-403
(*See also* names of localities.)
Raquette river:
  Description 175
  Drainage area 23
  Gaging station at Piercefield...........................176-8, 384
Rating table, discription of.................................. 15
Red House, Allegheny river, gaging station..............376-9, 385
Reels creek, drainage area.................................... 282
Rexford, Mohawk river, gaging station........................ 307-8
Richelieu river, drainage area................................ 181
Richelieu river, Fort Montgomery, Rouses Point, gaging station.... 185-6
Ridge Mills, above dam, Mohawk river, gaging station......... 289-90
Ridge Mills, below dam, Mohawk river, gaging station.......... 290
Riverbank, Schroon river, gaging station..................261-3, 385
Rochester, Genesee river, gaging stations..................45-9, 384
Roeliff Jansen kill watershed, precipitation at Silvernails.... 403
Rogers Rock, Lake George, gaging station..................... 194-5
Rome, above retention dam, Mohawk river, gaging station...... 292-3
Rome, above State dam, Mohawk river, gaging station........... 291
Rome, below retention dam, Mohawk river, gaging station....... 293
Rome, below State dam, Mohawk river, gaging station........... 292
Rome, Mohawk river, discharge measurements.................... 342
Rondout creek:
  Description 349
  Drainage areas 349
  Gaging stations:
    Lackawack 349-51, 385
    Rosendale 352-4, 385
  Precipitation records 401-2
Rosendale, precipitation 401
Rosendale, Rondout creek, gaging station..................352-4, 385
Rouses Point, Fort Montgomery, Richelieu river, gaging station.... 185-6
Rush creek, drainage area..................................... 34

S

Sacandaga river:
  Description 264
  Gaging stations:
    Hadley 267-9, 385
    Hope 265-6, 385
  Precipitation at Northville................................. 393
Salmon creek, drainage area................................... 66

PAGE
Salmon river, Franklin county, drainage area.................... 23
Saranac river:
  Description 201
  Drainage areas 181, 201
  Gaging station at Plattsburg..............................201–4, 384
Sauquoit creek, drainage areas.................................. 282
Saw kill, drainage area.. 343
Schaghticoke, Hoosic river, gaging station.....................273–5, 385
Schenectady, Mohawk river, gaging station........................ 307
Schoharie creek drainage basin:
  Description 335
  Drainage areas 288
  Gaging stations:
    Central Bridge 341
    Fort Hunter 341–2
    Middleburg 338–40, 385
    Prattsville 336–7, 385
    Schoharie Junction 341
  Precipitation records 401–2
  Water-surface elevations 341–2
Schoharie Junction, Schoharie creek, gaging station............... 341
Schroon river, description and gaging station at Riverbank.......261–3, 385
Schuylerville, Hudson river, gaging station....................... 234
Schuylerville, precipitation 391
Scio, Genesee river, gaging station..............................35–7, 384
Sconondoa creek, drainage area.................................... 64
Scotia, precipitation 398
Scriba creek, drainage area....................................... 65
Seneca Falls, above dam, Seneca river, gaging station............. 91
Seneca lake:
  Description 102–3
  Drainage areas 66
  Gaging stations:
    Geneva 104
    Watkins 103
Seneca river drainage basin. (*See* "Oswego–Oneida–Seneca river drainage basin.")
Shaffer creek, drainage area...................................... 65
Shakers Crossing, Canaseraga creek, gaging station................ 55–6
Sherwood Corners, precipitation................................... 403
Silver lake outlet, drainage area................................. 34
Silvernails, precipitation 403
Six-Mile creek, Oneida county, drainage area...................... 281
Six-Mile creek, Oswego county, drainage area...................... 65
Six-Mile creek, Tompkins county, drainage area.................... 66
Skaneateles lake, drainage area................................... 66
Skaneateles outlet, drainage area................................. 66
Slide Mountain, precipitation..................................... 401
Smith's Basin, Barge canal, gaging stations....................... 189–90

PAGE
Smith's Basin, precipitation 389
Smith's Basin, Wood creek, gaging stations 188, 190
Sonyea, near, Keshequa creek, gaging station 57–9, 384
South Chuctanunda creek, drainage area 285
South Onondaga, West branch, Onondaga creek, gaging station 122–3
Spier Falls, Hudson river, gaging station 220–2, 385
Sprite creek, drainage area 284
Spruce creek, drainage area 287
Stamford, precipitation 401
Starch Factory creek, drainage area 282
Stations, gaging, abandoned 7
Stations, gaging and precipitation, established 8
Stations, gaging, number maintained 9
Steels creek, drainage area 283
Sterling creek, drainage area 282
Steuben creek, drainage area 286
St. Helena, Genesee river, gaging station 38–41, 384
Stillwater, above lock No. 4, Hudson river, gaging station 236
Stillwater, below dam, Hudson river, gaging station 235
Stillwater, below lock No. 4, Hudson river, gaging station 237
Stittville, Nine-Mile creek, gaging station 321–2
St. Johnsville, Mohawk river, gaging station 302
St. Lawrence river drainage:
  Description 21–3
  Drainage areas 23
  Gaging stations. (*See* "Black river drainage basin," "Genesee river drainage basin," "Lake Champlain drainage basin," "Niagara river drainage," "Oswego–Oneida–Seneca river drainage basin," "Raquette river," *and* "St. Regis river.")
  Precipitation records 386–9
Stony creek, drainage area 64
Stream gages, instructions regarding 8
Stream gaging. (*See* gaging stations by name.)
Stream gaging, appropriation for 8, 13
Stream gaging report:
  Accuracy of data 9, 16
  Explanation of data 14–6
  Scope 9, 12
St. Regis river:
  Description 178
  Drainage area 23
  Gaging station at Brasher Center 179–80, 384
Stringer brook, drainage area 280
Sucker brook, drainage area 65
Sundown, precipitation 401
Survey, U. S. Geological:
  Coöperation 7, 11
  Report 12

PAGE

- Susquehanna river drainage basin:
  - Description 366
  - Gaging stations:
    - Chemung, Chemung river 372–4, 385
    - Chenango Forks, Chenango river 369–71, 385
    - Conklin, Susquehanna river 366–9, 385
- Sylvan Beach, Oneida lake, gaging station 133
- Syracuse, Onondaga lake, gaging station 119

T

- Taghanic creek, drainage areas 66
- Three River Point, Oneida river, gaging station 130–1
- Thurman, Hudson river, gaging station 216–8, 385
- Tides on Hudson river 254
- Timmerman creek, drainage area 283
- Toll bridge, Mechanicville, Hudson river, gaging station 242
- Tonawanda creek:
  - Description 27
  - Gaging stations:
    - Linden, Little Tonawanda creek 30–2, 384
    - Pendleton, Erie canal 27–8
    - Tonawanda, Erie canal 28–9
    - Tonawanda, Niagara river 23–4
- Tonawanda, Erie canal, gaging station 28–9
- Tonawanda, Niagara river, gaging station 23–4
- Trammel creek, drainage area 287
- Trenton Falls, at Morgan dam, West Canada creek, gaging station 328
- Trenton Falls, at power dam, West Canada creek, gaging station 325–7, 385
- Trenton Falls, precipitation 400
- Tribes Hill, Mohawk river, gaging station 306
- Tribes Hill, precipitation 398
- Trout river, drainage area 23
- Troy, above Federal dam, Hudson river, gaging station 249
- Troy, below Federal dam, Hudson river, gaging station 250–1
- Troy, precipitation 392–3

U

- U. S. Geological Survey:
  - Coöperation 7, 11
  - Report 12
- U. S. Weather Bureau, coöperation 7
- Utica, Mohawk river, gaging station 294
- Utica, vicinity of, precipitation 395–7

V

- Van Campens creek, drainage area 34
- Vandermark creek, drainage area 34
- Varney farm, Glens Falls, Hudson river, gaging station 222–3

PAGE
Versailles, Cattaraugus creek, gaging station....................24–7, 384
Virgil creek, drainage area.................................... 66
Vischer Ferry, above dam, Mohawk river, gaging station........... 309, 385
Vischer Ferry, at dam, Mohawk river, gaging station...........310–3, 385
Vischer Ferry, below dam, Mohawk river, gaging station......309–10, 385

W

Wallkill river watershed, precipitation records.................... 403
Wappinger creek watershed, precipitation at Pleasant Valley........ 403
Waterford, above dam No. 1, Hudson river, gaging station.......... 247
Waterford, below dam No. 1, Hudson river, gaging station........ 248
Waterford, Mohawk river, gaging station....................... 319–20
Waterloo, above dam, Seneca river, gaging station................ 89
Waterloo, below lock No. 4, Seneca river, gaging station.......... 90
Water-surface elevations:
  Black creek, Monroe county, at Genesee Junction.............. 60
  Canadice lake 34
  Canandaigua outlet at Alloway............................ 113
  Cayuga lake:
    Cayuga 107
    Ithaca 106
  Chadakoin river at Jamestown........................381, 383
  Champlain canal:
    Comstock 191–2
    Smith's Basin 189–90
    Whitehall 193
  Chittenango creek at Chittenango......................... 135
  Clyde river:
    Clyde 109
    Lyons 108
  Delta reservoir at Delta dam............................ 289
  Erie canal:
    Indian Castle 301
    Pendleton 28
    Tonawanda 29
  Ganargua creek, near Palmyra........................... 111
  Genesee river:
    Genesee Junction 45
    Rochester 49
  Hemlock lake 34
  Hinckley reservoir at Hinckley dam....................... 324
  Honeoye lake 34
  Hudson river:
    Albany 252–3
    Crocker's reef 227–8
    Fort Edward 225
    Fort Miller 229–30
    Glens Falls, ... 223–4

Water-surface elevations — *Continued:*
  Hudson river — *Continued:* PAGE
    Liberty Mills 232
    Mechanicville 238–9, 241–4
    Northumberland 231, 233
    Schuylerville 234
    Stillwater 235–7
    Troy 249–51
    Waterford 247–8
  Lake Champlain at Whitehall 184
  Lake Ontario at mouth of Oswego river 87
  Limestone creek at Fayetteville 143
  Limestone feeder at Fayetteville 144
  Mohawk river:
    Canajoharie 304
    Cohoes 315–6, 319
    Delta dam 289
    Dunsbach Ferry 314
    Fonda 305
    Fort Plain 303
    Frankfort 295
    Herkimer 297–8
    Ilion 296
    Indian Castle 301
    Little Falls 299–300
    Rexford 308
    Ridge Mills 290
    Rome 291–3, 342
    Schenectady 307
    St. Johnsville 302
    Tribes Hill 306
    Utica 294
    Vischer Ferry 309–10
    Waterford 320
  Niagara river at Tonawanda 24
  Nine-Mile creek, near Stittville 322
  Oneida lake:
    Brewerton 132
    Sylvan Beach 132–3
  Oneida river:
    Brewerton 125
    Caughdenoy 127–8
    Oak Orchard 130
    Three River Point 131
  Onondaga lake at Syracuse 119
  Onondaga outlet at Long Branch 120
  Onondaga outlet at Long Branch boat-house 121
  Oswego river:
    Fulton 72–6

Water-surface elevations — *Concluded:*
  Oswego river — *Continued:* PAGE
    Hinmansville 71
    Minetto 78–9
    Oswego 82–3, 85–7
    Phoenix 69, 70
  Schoharie creek:
    Central Bridge 341
    Fort Hunter 342
  Seneca lake:
    Geneva 104
    Watkins 103
  Seneca river:
    Baldwinsville 97–8
    Belgium 100
    Cross lake, Jordan 95
    Free bridge, near Cayuga 92
    Jack's Reef 96
    Montezuma 93
    Mosquito Point 94
    Mud lock, near Long Branch 99
    Seneca Falls 91
    Waterloo 89–90
  West Canada creek:
    Hinckley dam 324
    Kast Bridge 330
    Trenton Falls 328
  Wood creek:
    Comstock 191–2
    Smith's Basin 188–90
    Whitehall 193
Watkins, Seneca lake, gaging station 103
Weather Bureau, U. S., coöperation 7
West Canada creek:
  Description 323
  Drainage area 283–6
  Gaging stations:
    Hinckley dam, Hinckley reservoir 324
    Kast Bridge 329–31, 385
    Trenton Falls, at Morgan dam 328
    Trenton Falls, at power dam 325–7, 385
  Precipitation records 399–400
  Water-surface elevations 324, 328, 330
Westerlo, precipitation 401
West Hurley, precipitation 401
West river, drainage area 65
West Shokan, precipitation 401
White creek, drainage area 34
Whitehall, above lock No. 12, Wood creek, gaging station 193

PAGE
Whitehall, Lake Champlain, gaging station........................ 183–4
Whitehall, precipitation 389
Windham, precipitation 401
Winooski river, drainage area.................................... 181
Wiscoy creek, drainage area...................................... 34
Wolf creek, drainage area... 34
Wood creek, Oneida county, drainage area......................... 64
Wood creek, Washington county:
  Description 187
  Drainage areas 181
  Gaging stations:
    Comstock, above lock No. 11.................................. 191
    Comstock, below lock No. 11.................................. 192
    Smith's Basin, above dam 188
    Smith's Basin, below lock No. 9.............................. 190
    Whitehall, above lock No. 12................................. 193
  Precipitation records 389
  Water-surface elevations 188, 190–3
Woodworth lake, drainage area.................................... 284

Y

Yatesville creek, drainage area.................................. 284

Z

Zena, precipitation 401
Zimmerman creek, drainage area................................... 283

INDEX

TO

LEGISLATIVE DOCUMENTS FOR 1919

A No.

Adjutant-General, report 114
Agricultural and Industrial School, Industry, report 117
Agriculture, Commissioner, report 59
Albion, Western House of Refuge for Women, report 68
American Scenic and Historic Preservation Society, report 102
American Society for Prevention of Cruelty to Children, report 120
Appropriations, Governor's statement of desired appropriations 28
  for investigations, message from Governor requesting 79
  message from Governor on annual appropriation bill, with veto of items disapproved 82
  requests for 11
Assembly, bills, supplemental index 131
  committees, list 23
  members 2
Attorney-General, report 53

B

Banks, Superintendent of, report on banks of deposit and discount 4
  report on Savings and loan associations, Land banks, etc 5
  report relative to Savings banks, Trust companies, etc 6
Batavia, New York State School for the Blind, report 8
Bath, New York State Soldiers' and Sailors' Home, report 20
Bedford Hills, New York State Reformatory for Women, report 21
Bills, Assembly, supplemental index 131
  Senate, supplemental index 130
Blind, New York State Commission for, report 39
  schools for, reports 8, 33
Boards, commissions and departments, *see specific names of.*
Bridges, final report of joint committee on 52
Bronx Parkway Commission, report 61
Budget estimate 11

C

Canals, report of Comptroller relating to expenditures on 101
  report of Superintendent of Public Works on 27
Central New York Institution for Deaf Mutes, Rome, report 92
Charities, Fiscal Supervisor, report 85

No.

Charities, State Board of, report 62
Children, American Society for Prevention of Cruelty to, report 120
  minimum wages, message from Governor on 81
  New York Society for the Prevention of Cruelty to, report 122
Civil practice, simplification of, report of joint committee on 111
Civil Service Commission, report 63
Commissions and departments, *see specific names of.*
Committees of the Assembly 23
Committees, standing, Senate, list 22
  revised list 26
Commutations granted by Governor, statement of 47
Comptroller, State, compilation of desired appropriations 28
  report 10
  report on expenditures on the canals 101
  requests for appropriations filed with 11
  special report on expenditures 42
  special report on municipal accounts 29
Conner, J. T., preliminary report on investigation of Industrial Commission 74
Conservation Commission, report 54
  reply to Senate resolution on Chief Game Protector 66
Consolidated laws, supplement to statutory record 132
Cornell University, State Veterinary College, report 7
Cotillo, Senator Salvatore A., address 97
Court of Claims, report 58
Craig Colony for Epileptics, report 9
Crime, statistics of, report of Secretary of State 57
Crippled and Deformed Children, New York Hospital for, report 96

D

Deaf mutes, institutions for the instruction of 90, 91, 92, 106, 107
Departments, *see specific names of.*
Diseases, malignant, *see* Malignant diseases.
Drugs, report and testimony taken before joint committee on 126

E

Education Department, report 65
Elections, Superintendent, report 49
Elmira Reformatory, report of managers 121
Employment Bureaus of Industrial Commission, message from Governor requesting appropriation for 77
Engineer and Surveyor, State, report 31
Epileptics, Craig Colony for, report 9
Excise, Commissioner of, report 12
Extraordinary session
  Housing, statement and recommendations on, Doc. No. 1.

F No.

Farms and Markets, Council of, communication on prices for milk....... 37
  preliminary report on investigation of prices of milk.............. 94
  report 73
Farms and Markets, Department of, message from Governor relative to.. 80
Feeble-minded, State Commission for, report........................... 44
Feeble-minded Children, Institution for, report....................... 41
Feeble-minded Women, Custodial Asylum for, report..................... 25
Fire Island State Park Commission, report............................. 36
Fiscal Supervisor of State Charities, report.......................... 85
Food Commission, report... 35

G

Governor, requests for appropriations filed with...................... 11
  statement of desired appropriations 28
  statement of pardons and commutations granted by................... 47
Governor, messages:
  annual 3
  on annual appropriation bill, with veto of items disapproved....... 82
  on reconstruction 34
  relative to Department of Farms and Markets........................ 80
  relative to minimum wages for women and children................... 81
  requesting appropriations for Employment Bureau of Industrial Commission 77
  requesting appropriations for investigations....................... 79
  submitting report of committee on National Guard and State Militia 48
  transmitting report of Reconstruction Commission on Military Training for Boys.. 78
Grand Army of the Republic, annual encampment, report of proceedings. 125
Greece, resolution requesting the United States at the Peace conference to support claims of people of.................................. 95

H

Hamilton, F. W., chief game protector, reply of Conservation Commission to Senate resolution on..................................... 66
Health, State Department, report..................................... 112
Health Officer, Port of New York, report.............................. 24
Highways, State Commission, report................................... 113
  supplemental report 76
Historian, State, report... 136
  supplement to report, Johnson papers.............................. 128
History of the State of New York in World war........................ 129
Hospital Commission, report 84
Hospital for Study of Malignant Diseases, report...................... 72
Housing, statement and recommendations to Governor by joint committee on, extra session 1
Hudson, New York State Training School for Girls, report.............. 40

I

	No.
Ice Comptroller, report	69
report on ice situation in New York city	55
Indians, Cayuga nation, report of committee of Land Office on agreement with	67
Industrial Commission, message from Governor requesting appropriation for employment bureaus	77
preliminary report of investigation of affairs	74
report	124
Industry, New York State Agricultural and Industrial School, report	117
Insurance, Superintendent of, report	60
Investigations, Industrial Commission	74
message from Governor requesting appropriations for	79
Iroquois, Thomas Indian School, report	56

J

Jamaica Bay-Peconic Bay Canal Board, report	16
Jewish Protectory and Aid Society, report	93
Johnson, Sir William, public papers	128
Juvenile Delinquents, Society for the Reformation of, report	118

K

Kelly, Rev. Francis A., address	95

L

Land banks, report of Superintendent of Banks, relative to	5
Land Office, Commissioners, report on escheated lands	50
report of committee on agreement with Cayuga Indians	67
Laws *see* Consolidated laws; Unconsolidated laws.	
Le Couteulx St. Mary's Institute for Improved Instruction of Deaf Mutes, report	91
Letchworth Village, report	17
Library, State, report	123

M

Malignant Diseases, State Hospital for study of, report	72
Members of the Assembly	2
Members of the Senate	1
Messages from the Governor, *see* Governor.	
Military training for boys, message from Governor transmitting report of Reconstruction Commission on	78
Militia, report of committee on policy of State relative to	48
Milk, prices for, communication from Council of Farms and Markets on	37
preliminary report on investigation of same	94
Minimum wages for women and children, message from Governor on	81
Mohawk and Hudson River Humane Society, report	75
Monuments Commission, report	70
report on monument to the 79th regiment	71
Municipal accounts, special report of Comptroller on	29
Museum, State, report	64